ADVENTURES OF FUTURE SCIENCE

WONDER Stories

February

A GERNSBACK PUBLICATION

HUGO GERNSBACK Editor

25¢

"THE SPORE DOOM"
by Eando Binder

JAPANESE ROSE BUSHES

The Wonder of the World

Japanese Rose Bushes **bloom all the year round.** Just think of it. Six weeks after planting the seed, the plants will be in **full bloom.** It may not seem possible, but we positively **guarantee it to be so.** They will **bloom every ten weeks,** Summer or Winter, and when three years old the bush will be a **mass of roses,** bearing from five hundred to a thousand roses on each bush. The flowers are in three shades —white, pink, and crimson. The plants will do well both in and out doors. We guarantee at least three bushes to grow from each packet of seed. **Price, 10c** packet, 3 pkts. for **25c** postpaid

Chinese Fragrant Tree Fern

Just introduced; noted for its rapid growth. An exceptionally pretty ornamental plant. Foliage is rich dark green. Forms grand pyramidal bushes about 6 feet high, branches very desirable for decorative purposes, wreaths, etc. **Seeds 15c pkt., 3 for 40c.**

Weather Plant

NATURE'S WEATHER PROPHET
By mysterious changes that take place, this remarkable plant accurately forecasts the weather many hours in advance. Will grow anywhere all the year around. An interesting house plant. Bears large, fragrant, pink, butterfly shape flowers. **Seeds, 15c packet, 3 for 40c, postpaid**

GROUND ALMONDS

Amazingly Prolific—Easily Grown From Seed
The Ground Almond has a flavor that is MOST EXCELLENT, resembling the cocoanut. The meat is snow white, covered with a shell or skin of brown color. It grows close to the surface and anything from 200 to 300 Almonds may be expected from a single nut. There is no trouble whatever in growing anywhere and in any kind of soil. May be planted any time, and in eight or ten weeks from time of planting you will have an ENORMOUS CROP of the MOST DELICIOUS ALMONDS YOU EVER TASTED. **Seeds 15c Pkt.**

Chinese Cabbage

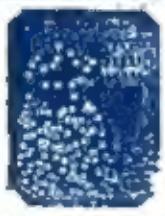
Novelty from China and should be grown in every garden. Seems to be a cross between Celery and Cos Lettuce. Flavor is more mild than any other cabbage. **Can be served on the table** and eaten raw or cooked like cabbage, spinach or lettuce or made into salad. Grows very rapidly, easy to cultivate. You can create quite a sensation by cultivating this remarkable novelty. **Seeds, 15c packet, 3 pkts. for 40c.**

TREE OF HEAVEN

This splendid ornamental tree is a native of China, and is called the Tree of Heaven, on account of its great beauty. Very hardy, thrives in any soil, no matter how poor, and grows from 6 to 10 feet high from seed the first summer. The leaves are from 2 to 3 feet in any length, giving it a grand appearance. Nothing outside the tropics can rival it for lawn decorations. Large panicles of bloom, followed in autumn by great clusters of colored seed pods, make the tree a continual thing of beauty. **Packet, 15c; 3 packets 40c**

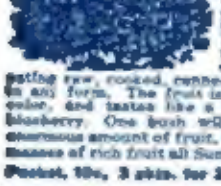
THE REMARKABLE FIREFLY PLANT — A Vine that Blooms at Night

Fills the Atmosphere with Fragrant Aroma



One of the most rapid growing vines known. Under favorable conditions this vine has been known to grow OVER 25 FEET IN A SINGLE WEEK. In a very short space of time indeed the Vine has climbed to a great height, and is covered with IMMENSE FLOWERS, from 5 to 7 inches in diameter. It is, indeed, a great novelty, for, unlike other plants, the flowers OPEN IN THE EVENING, and remain open until about noon the following day. In dull weather they will remain open all day. It is a most INTERESTING object to watch the opening and closing of the flowers as the clouds appear and disperse. As the flowers open they give forth the most DELIGHTFUL AROMA and the whole atmosphere around is full of scented fragrance. It is always the object of favorable comment, and much curiosity is aroused by people passing at night time as to the cause of the charming aroma, frequently stopping in an endeavor to satisfy their curiosity. **PRICE 10 CENTS packet, two packets for 15 CENTS, POSTPAID.** JOHNSON SMITH & CO.

The Great Wonderberry



A luscious berry that may be grown and ripened from seed in any soil or climate in 3 months. The flavor is fine and unsurpassed for eating raw, cooked, canned or preserved in any form. The fruit is blue-black in color, and tastes like a luscious, rich blackberry. One bush will produce an enormous amount of fruit, yielding great masses of rich fruit all Summer and Fall. **Packet, 10c, 3 pkts. for 25c, postpaid.**

Shoo Fly Plant

A very remarkable Botanical curiosity you should have. Though quite scentless it is said flies will not remain in a room where it is grown. Bears very pretty blooms; blooms summer and winter. Grows rapidly from seed **SEEDS 10c pkt., 3 for 40c, postpaid.**

Banana Musk Melon

Quite a curiosity. Looks and smells like a banana. Peculiar shape and its delicious flavor make it well worth your while cultivating. Flesh is deep red of exquisite flavor. Very high prices are obtained in choice city markets, as high as a dollar sometimes being demanded for one single specimen. **Seeds 10c, 3 pkts. for 25c.**

The Great Japanese Umbrella Palm — A Graceful Ornamental Conservatory Plant

Easily Grown From Seed Winter or Summer

The Japanese Umbrella Palm is a semi-aquatic plant. It is easily grown from seed either in a bowl of water or in very damp soil. Probably the most usual, as well as the most interesting method, is to cultivate the plant in a bowl or jardiniere filled with water, with two or three inches of good garden soil at the bottom. The seeds soon commence to germinate, and the plant shoots up stems two to three feet high and rapidly assumes a most pretty palm-like appearance, as shown in the engraving. The tops of the stems are surrounded by a wheel of umbrella-shaped leaves, of a waxy appearance. We will send a package of this seed, with full instructions for culture, for only 15c or three packets for 40c postpaid.

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Blooms only at night, giving forth the most delightful scented fragrance for quite a distance. Copies moth ornament. For house or garden. Also valuable because of rare perfume yields from it. **SEEDS, 10c pkt., 2 for 25c.**

CACTUS FROM SEED

Very curious, odd looking, strange species of plants; will thrive anywhere with little or no care. Flowers are of exquisite beauty and delightfully fragrant. You will be astonished at the odd shapes of the Cacti just sprouting. **Packet, 10 cents. Three packets for 25 cents, postpaid.**

GIGANTIC NEW GUINEA BUTTER BEANS

THE NEW EDIBLE VEGETABLE WONDER

Grows to an astounding size, the beans measuring from 3 to 4 feet long, and weighing anything from 10 to 20 lbs. and even more. One bean is sufficient for a family for several meals. Very palatable and rich in nutritious materials. The delicate buttery flavor is much appreciated. The Vines are easily grown, very prolific, and a most welcome and valuable adjunct to your garden. Try them; you will find there the **most delicious vegetable you have ever tasted.** Imported direct. Unobtainable elsewhere. Sample package of Seeds with full directions for cultivating and cooking. **25c, postpaid.**

Kudzu Vine

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Seeds 10c packet. 3 for 40c.

Yard Long Bean

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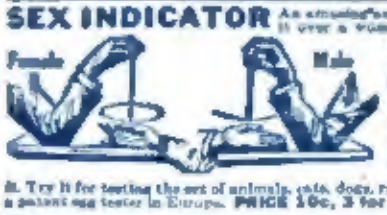

As amusing and entertaining novelty. Hold it over a woman's hand and it is supposed to describe a complete and continuous circle. Hold it over a man's hand and watch it move back and forth like a pendulum. We have made innumerable tests, and while we have never been able to figure out how it's done, we have never seen it fail. Many novel and interesting experiments may be performed with it. Try it for testing the wit of animals, cats, dogs, rabbits, butterflies, etc. Sold as a patient egg tester in Europe. **PRICE 10c, 3 for 25c, 75c per doz. p-p.**

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Enjoy Radio, its games, secrets, intrigue, etc. The Diplomat "EFFICIENT RADIO FOR BEGINNERS" shows how to build and operate genuine Radio Sets, the materials for which can be purchased for a mere trifle. Also tells how to buy and operate Receiver for listening in foreign stations, police calls, storm at sea, etc. **ONLY 75c, postpaid**

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WONDERFUL X-RAY TUBE

A wonderful little instrument producing optical illusions both surprising and startling. With it you can see what is apparently the bones of your fingers, the lead in a lead pencil, the interior opening in a pipe stem, and many other similar illusions. **Price 10c, 3 for**

ITCHING Powder

This is another good practical joke! the intense discomfiture of your victims is enjoyed by everyone but themselves, who find it thoroughly enjoyable. All that is necessary to start the ball rolling is to deposit a little of the powder on a person's hand and the process can be relied upon to [illegible]. The result is a vigorous scratch, then more scratch, and still more. 10c box, 3 for 25c or 75c per dozen. Shipped by Express. Not Prepaid.

ANARCHIST BOMB

One of these given to be dropped in a room full of people will cause more excitement than a Limburger cheese. The smell entirely disappears in a short time. 10c per Box, 3 Boxes for 25c., 75c per doz. Stink Bombs, or $7.50 per gross. Shipped by Express. Not Prepaid.

SNEEZING POWDER

Place a very small amount of this powder on the back of your hand and blow it into the air and watch them sneeze without knowing the reason why. It is most amusing to hear their remarks, as they notice a fine white powder, but think they have caught a cold in other. Between the intervals and guessing you yourself will be having the time of your life. For parties, political meetings, or any place where there is a gathering of people, it is the greatest joke out. **PRICE 10c, 3 for 25c., 75c per dozen. Shipped by Express. Not Prepaid.**

COMICAL MOTTO RINGS

Lots of harmless fun and entertainment among friends. Made in gilt finish (to resemble gold), with motto [illegible] as illustrated. **Price 25c. ea. Post. Paid**

GoodLuck RING

Very striking, quaint and uncommon. Odd and gruesome design with real creepiness don't you know. Looks like imitation rubies or garnets sparkle out of the eyes. Said to bring good luck to the wearer. **PRICE 25c Postpaid.**

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Dice, gipsiness, crystal, etc. Tells meaning of each card. (Different methods explained). Crammed full of complete information. **PRICE 10c postpaid**

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WONDER STORIES *are everywhere*—
If you know where to find them!

BELIEVE It Or Not, real wonder stories are going on day and night, and right now, more wonder stories are happening all around you than you will find in the pages of this magazine.

While you are reading this, music, speech, talk, which originated perhaps 12,000 miles away from where you are, is vibrating in your body, only you don't know it.

But the short wave fraternity all over the world knows this, and for a few paltry dollars they rig up in their own homes a short wave set which brings in stations from the Antipodes. Such sets cost as low as $6.20, believe it or not. So if you are looking for real wonder stories, they are in the making right along.

How can you listen to Sydney, Australia; to Berlin, to Moscow, London, day in and day out, at practically no cost at all? Just get the catalog, which is a veritable encyclopedia of facts, described below, and you will be writing your own wonder stories.

Here are a few samples of actual wonder stories told by actual listeners:

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I have constructed the OSCILLODYNE RECEIVER and boy! how it works!

The first day without any trouble I received Spain, England, France, and other foreign countries. Amateurs! why I never knew there were that many until now. With the one tube Oscillodyne, I bring in more stations on one plug-in coil than with a set of coils on different short wave sets.

IF ANY ONE IS TRYING HIS LUCK ON SHORT WAVE SETS, IT WILL BE WORTH WHILE TO CONSTRUCT THIS ONE TUBE OSCILLODYNE.

PAUL KORNEKE, JR. N. S.
Pittsburgh, Pa.

FOREIGN STATIONS GALORE

It may interest you to know that yesterday, on my Doerle short wave set at 12:45, P.S.T., I heard CFH at Rio de Janeiro. They came in at 10220 Kcs. and the announcing voice was as clear and strong as on an ordinary telephone.

I am using just 45 volts for both detector and audio stage on the plate. What it would do on 90 volts on the audio I do not venture to say.

At the moment 10.35 P.S.T., I am listening to phone from Japan to Hawaii. No station identification however. Around 10,080 K.C.S. KKD—Kauhuku Hawaii just identified his station.

HARRY V. DAVIS,
Penticton, B.C., Canada.

THE WHOLE WORLD

In the past two days I brought in with my Oscillodyne S-W Set the following foreign stations: 12RO, DJC (this with such volume that I was able to plug in the loudspeaker) and a French station which I was unable to identify, but I believe it to be FYA Pontoise, and also another German station which I have not been able to identify as yet.

On Wednesday EAQ was weak and noisy and DJC was loud and clear, but on Thursday the conditions were reversed. I have received many United States stations, such as W8XAA, W8XF, W8XK, W2XE, etc., etc.

In Short Wave Craft, this set was called A WONDER SET, and I certainly agree.

C. W. KNIKRIM,
Hollis, L. I., New York.

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THE MAGAZINE
OF PROPHETIC FICTION

Vol. 5, No. 7 — February, 1934

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ON THE COVER this month we see the battle of the tripod-cars. By delicate manipulations, Roy Cantwell has just thrown the vehicle of his enemy, Max Spardo, crashing its dome, which seals Spardo's death by asphyxiation in the unbreathable atmosphere. (From "The Spore Doom" by Eando Binder.) Cover by Paul.

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THE increasing demand by our readers for new titles to be added to the SCIENCE FICTION SERIES has now been met. Six new books have been published and are now ready. Many new authors have contributed excellent stories which you will enjoy reading. A short summary of the new titles will be found below.

These new books, as usual, are printed on a good grade of paper, and contain brand new stories never published before in any magazine.

Each book (size 6 x 8 inches) contains one or two stories by a well-known science fiction author.

The Titles Are:

13—MEN FROM THE METEOR
by Parzie E. Black

In the unexplored heart of Australia lay the bizarre and cruel civilization of the meteormen. And into their midst came the two men from Outside, to pit their puny strength against the meteormen's power.

14—THE FLIGHT OF THE AEROFIX
by Maurice Renard

Renard is the H. G. Wells of France. With sly humor and yet grim reality he describes the most unusual and startling flight made by man. An entirely new type of transportation dawns upon the world in this masterly story!

15—THE INVADING ASTEROID
by Manly Wade Wellman

Into the vision of the Earth swam the huge but innocent asteroid. Mars, at death grips with the Earth, was far away; but the asteroid loomed ominous, menacing. Two men were delegated to solve the mystery; and what they found is revealed in this startling story.

16—IMMORTALS OF MERCURY
by Clark Ashton Smith

Under the sun-parched surface of Mercury, we follow in this story, the experiences of a man, reminiscent of Dante's Inferno. Every force of grotesque nature, the bitter enmity of the Immortals track him down in his wild escape to the surface.

17—THE SPECTRE BULLET
by Thomas Mack

and

THE AVENGING NOTE
by Alfred Spriesler

are two surprises for the lovers of scientific detective mysteries. Death strikes suddenly in these stories; clever scientific minds and cleverer detectives are pitted against each other in a duel with Death.

18—THE SHIP FROM NOWHERE
by Sidney Patzer

A trip to infinity is this unusual story; a mad chase across the infinite emptiness, tracked always by the avenging Marauder. Here is a story that deals with millions of years and billions of billions of miles.

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VOLUME 5
No. 7

WONDER Stories

FEBRUARY
1934

. . . . Prophetic Fiction is the Mother of Scientific Fact . . . .

HUGO GERNSBACK, *Editor-in-Chief*
CHARLES D. HORNIG, *Managing Editor*
FRANK R. PAUL, *Art Editor*
C. P. MASON, *Associate Editor*

WONDERS OF OUR COLOR SENSE

By HUGO GERNSBACK

WHEN modern man looks about him and sees the myriad of colors abounding in nature, he is apt to jump to the conclusion that these colors are real. He imagines that the sky is blue, that the poppy is red, that grass is green.

All of this, however, is pure imagination. Sir Isaac Newton was probably the first one to point out that color, as we know it, is in the eye itself—not in the sky, not in the poppy nor in the grass. To quote from Newton: "The rays are not color. In them is nothing else than a certain power or disposition to stir up a sensation of this or that color. So colors in the object are nothing but a disposition to reflect this or that sort of rays more copiously than the rest." While the old school still clings to the proposition that color exists only in the eye, Prof. J. S. Haldane of Cambridge University believes color exists also in nature. To this effect, Haldane reports several rather remarkable experiments, which throw doubt on the older theories. For instance, he looked at the blue sky through a narrow blackened tube and saw the blue color change to white. A sunset assumed colors unimaginable and garish. "White" clouds were of a yellow color. He next illuminated a small part of a white screen with an electric torch, giving daylight values, and found to his surprise that it appeared blue when viewed through a hole in a second screen which was lighted by a yellow lamp. Haldane concluded that, when the sky seems blue to us, it is because our eyes *create* the color to protect themselves against the intolerably strong yellow glare of the sun.

Science has pointed out that while the rods and cones in our retina respond to colors, the sensation of color is not a physical but a psychological phenomenon. Just as in outside nature there exist no pain and pleasure sensations, there also does not exist in nature either light or color. Here we have only mass and motion. Light is nothing but a wave-motion. The eye, which has been developed from mere skin through many millions of years, is merely an organ which detects these light waves. In other words, if there were no eyes, there would be no colors. We might conceive a blind race (like the termites, for instance) which, in order to get a knowledge of light waves, would use light-sensitive photoelectric cells. Such cells, of course, would give the termites no color indication whatever, any more than a radio detector tube differentiates between the longer and shorter radio waves. In order to intercept lower or higher radio waves, you use a condenser to "tune" to such waves. In the human eye, this "tuning" is done by means of the rods and cones of the retina. If there is a defect of the retina, colors are no longer perceived, and we call such an individual "color-blind." He then sees only the yellows and the blues, while red and green are not existent for him. If the individual is totally color-blind, he perceives the world as uniformly gray, that is, with only the contrasts of black and white drawings; and the world to such an individual looks very much like an uncolored motion picture. His eyes can't "tune."

It is a curious thing to note that the ability to observe colors is of comparatively recent origin. Thousands of years ago, human beings did not notice distinctions in colors; even such comparatively recent historians as Homer and Xenophon, for instance, described the rainbow as of three colors, purple, red and yellow. In the oldest literature of humanity, the Vedas, descriptions of colors do not exist.

As a second color, much later, many peoples began to see, next to red, the luminous orange-yellow. Thus the statues of the second Hellenic epoch were painted in red and ochre. Black, white, red and yellow seem to be the four distinguishing colors of antiquity. On the other hand, when we go back to the Egyptian period, we find about 2200 B.C. all sorts of colors in the Egyptian tombs; and we here, for the first time, find a blue sky which corresponds with the blue color impression which we have today. How do we explain this seeming contradiction?

As pointed out first, color is not a physical but a psychological product; it has to do with high culture and education. A child must be taught the different colors. The young child frequently, before it is three years old, distinguishes only between red and green. This explains why the Egyptians, who were of a particularly high civilization, had acquired a well-developed color sense; while other races, more backward, were still without blues.

(Illustration by Paul)

The giant tripod-car picked its way along torn pavements, tumbled buildings, and heaps of débris; the toll of two centuries.

THE SPORE DOOM

By EANDO BINDER

● There is no doubt that the scientists will play a large part in the next war. They are even now developing new poisonous gases and death rays. The destruction that may be wrought with such forces can hardly be conceived. Great cities may be devastated of human life in mere hours—nations wiped off the face of the earth. It is horrible to anticipate such events, and yet their occurrence is more than a possibility.

In this story, we are shown the results of the Great War of 1975. Biologists had developed a fungus growth that was meant only to poison the ground of the enemy, preventing crops from maturing, thereby starving the populace. Such a thing is ghastly enough in itself. But the fungus goes much farther! In our author's own words, "It starts on a campaign of its own."

● If a man of the twentieth century, cruising about in some sort of aircraft, looked down on the world of the middle twenty-second century, he would be immeasurably astonished. He would see with unbelieving eyes a vast jungle of plant life, of a different evolution from any he had ever known. Send his ship where he would, there would be nothing but scrubby bushes, tangling vines and interlocked festoons. Even the old desert spots that had once grown naught but hardy cacti, would reveal the same maze of undulating jungle. Our hypothetical traveller would find all earth in the grip of rooted life; every square mile of land would be under its dominance.

In horror and awe he would realize that some super-prolific evolution of plant life had overrun the world, unchecked and invincible. Hovering just above the swaying branches, he would recognize none of their forms. He would see gnarled growths bearing fruits and berries that looked like fruits of old but with the stamp of new species in their form, size, and color. There would be a bewildering array of varieties, as though some necromantic agriculturist had spread a million different kinds of seeds to the winds. Supposing he were a botanist, he would gasp at the strange mixture of ferns, low trees, grasses, and fungi that sometimes grew from the same spot of ground. To his orderly scientific brain it would be madness to see this aimless *pot pourri* of growing things of the soil.

A vast jungle. Humid mists constantly rising from the foot-thick layer of rotting débris on the ground. A uniform carpet of greens and grays, with here and there spots of brighter color. Seeds and spores, tufted or feathered, swirling in countless myriads in the wind. An endless hothouse of Nature. But the most dominant form of plant was unmistakably a fungus. Its uprearing bulbous head with prongs that glowed with ghostly luminosity seemed everywhere, as though it were a royal race surrounded by many different tribes of enslaved subjects. And the tallest trees of former ages were singularly absent, as though they had succumbed to the new vegetation.

The traveller would arouse from his stupor. Where was Mankind? Where was animal life? Was it a purely vegetable world? "Impossible," he would think, "for then what would complete the carbon-dioxide oxygen cycle?" But he would search the forests in vain for vertebrate life! He would find insects galore, some of them familiar, most of them new . . . . but no creatures of feathers or fur.

But Man? Where was human life?

Our traveller would then orient him-

self by the Great Lakes and follow the shores of Lake Michigan till he came to the old site of great Chicago. If he had survived all the previous wonders without a nervous breakdown, now surely he would fall to his knees in hysteria. The former city of miles upon miles of streets and buildings would be a shambles, deluged beneath botanical hordes. Cracked and crumbling and rusted, the giant buildings would barely rear above the jungle top. But they were dead, desolate, untenanted. Even the sturdy concrete pavements were upflung, triumphant grasses and bushes growing in cracks. It would avail the traveller nothing to seek a habitable city on the face of the earth—all . . . . all were as this one!

● In the year 1975, the nations of earth, taking no heed of the lessons of history, had again flown at one another's throats in a devastating war that outshone all past performances in destruction. Each side armed with frightful scientific armament, the war became a holocaust. In titanic struggle, they hurled their might at each other, loosing vicious death rays, thunderous cannon, terrifically powerful bombs, and insidious poison gases. Each wanted mastery of the world; each wanted the enemy wiped out. Yet it was an equal struggle for many years and lives sacrificed amounted to hysterical numbers.

Finally one enemy gained supremacy. Defeat seemed inevitable to the other side. Into their retreating armies was poured a ceaseless deluge of destruction. In desperation, the war-lords of the retreating armies cast about for a straw of hope. And they undertook something that promised victory. Their scientists, who had all along prepared cultures of disease germs to spread amongst the enemy, developed a new form of fungi parasitic to most food plants.

Faced with the doom of extinction, the nearly defeated belligerent hesitated not in the least to sow the spores of the new fungus in their opponent's lands, dropping them in countless numbers from high in the stratosphere. The effect was noticeable in a few months, just at harvest time. The almost victorious enemy awoke to the fact that their crops did not yield as they should. Through that next winter, starvation so depleted their numbers that the other side again mustered forces and flew to the attack. The next year was a horror not fit to record.

Suffice it to say that a deadlock resulted. One side was reduced by starvation; the other by lack of resources. Armistice was signed and the stupendous task of recovery begun.

But something was wrong! Gradually the whole world came to feel it. The war-scientists had tampered with dynamite. The parasitic fungus that they had so desperately and thoughtlessly loosed on the world began a campaign of its own. Do what they would, mankind saw with growing fear that the new fungi could not be eradicated. Its spores blew with the four winds and infested all lands, till it was seen everywhere. Immediately, Mankind, reunited under this threat, pooled its science and grappled with the problem of staving off universal starvation. For the new freak fungus had attacked and destroyed most forms of edible plant life.

It was not many years after, that the threat of starvation vanished, however. No one knew the reason; no one cared to know. The fact itself brought a breath of relief to all humans the world over. It was noticed that the new fungi, possessed of some strange property never before seen in plant life, had changed from a parasite to a *blender of species!* It seemed able to cross-breed itself with any and all forms of vegetation, producing grotesque and freakish forms. It became a universal "solvent," in a botanical way, drawing together and interbreeding other forms of vegetable life. The scientific world saw all this in stupified astonishment. The queer fungus seemed to be a new form of life with properties all its own. Some few far-seeing individuals predicted that a Nemesis had been loosed on the face of the earth.

In a few more years, the doom of earth

announced itself. The new fungi, in its Machiavellian ramblings, going through cycles of evolution in short months, which ordinarily took thousands of years, evolved suddenly a freak growth that *absorbed oxygen direct from the air!*

Why it, a plant, should do that, no one knew. And then, as if the malignant fungus had reached an acme or a goal, the new oxygen-consuming freak burst out in full strength and overran the earth.

Thus Mankind was faced with a black future—where the precious oxygen was being sucked from the air and cast to the ground in combined form. The oxygen end of the carbon-dioxide oxygen cycle was going to be taken over by a plant, leaving animal life in the lurch. The new freak fungi grew so rapidly and so widely, that it became obvious all the rest of the vegetation could never keep up the balance of oxygen in the air. Mankind waited a while, hoping the new freak would die out, as so many had before. But it seemed a goal had been reached, like a balanced reversible chemical reaction—the goal that the amazing fungi had striven toward. Sometimes it was whispered that the freak fungus had an intelligence of its own . . . .

Then the scientists acted. Estimates showed that within fifty years, at the rate then in progress, most of the oxygen would be gone. By the turn of the century, Mankind had begun to dig, and by the middle of the next century, human life had deserted the asphyxiated outside world. Living in the bowels of the earth, they had become human moles . . . .

CHAPTER II

An Enemy in the Making

● In Underground City Number 16, which was located in the reformed and extended caverns of Mammoth Cave, Kentucky, Roy Cantwell stopped his labors and rested chin in hands, deep in thought. He was a fruit-analyzer in the Food Department, just one of the dozens of others. But a sudden thought had come to him in the midst of his routine work. His eyes had fastened on the long tray of sample fruits that had to be analyzed for possible poisons (for the breed-blender fungus had mixed all products indiscriminately, poisonous with edible). With a strange fascination, he looked at the widely different fruits and something seemed to click in his mind. The day before he had analyzed a batch of samples similar to this, and had been puzzled at a certain ordered succession of properties.

"There's something in that!" he muttered to himself. The next moment he jerked from his revery as a harsh voice, just behind his ear, spoke. "No loafing, Cantwell. Can't allow it in my department."

Roy looked up, confused, at the superintendent. "Sorry, Mr. Winter. I . . . . I . . . . just . . . . "

"Forget it, whatever it is," boomed the superintendent. "And get to work. That bunch of samples must go out today."

"Yes, sir," and Roy bent to his work as Winter eyed him a moment and then left. Roy sighed. Life was sometimes so provoking and drudge-like. In the underground life, each man and woman must work hard and long all his life to keep humanity from dying out.

In another two hours, he had finished his analysis and sent the tray of samples on with the reports on their edibility and vitamin content. Below, in the huge storerooms, the original batches from which the samples had been taken would be handled according to the analysis. If poisonous, they were converted into paper and cloth; if edible, they were sent to the food distribution center.

After a covert glance around to see that Winter was not near, Roy placed his duplicate analysis sheet before him and examined it eagerly. A low whistle came from his lips. Then he saw the superintendent turning a corner on his periodical round of the huge laboratory, and hastily crammed the paper into a pocket of his belt. Then he resumed his work.

Roy Cantwell, born and raised in the underground city, was a typical human specimen of the time: skin a light tan from

the compulsory ultra-violet treatments that everybody took twice a week; clothing simple and thin because of the constant temperature and humidity; health superb because of the city's scientific methods of vitamin control and medicinal protection.

He was, however, something fuller and stronger than most men, who, in general, were flat-chested and weak-muscled because of the lifetime confinement in an artificial environment. Pleasing of manner, passably good-looking, and quiet natured, he was all in all a pleasant fellow. But sometimes his keen blue eyes, beneath a shock of curly hair, smoldered with secret ideas of his own. The confined life of the underground city irked him and made him long for a happier, more expansive life.

But he sighed again as the signal released him from duty. What was the use of yearning for a different life? All earth was the same; all human life completed its cycles underground. Yet he knew it had been different. Once a friend of his had secretly lent him an ancient book, a forbidden book, that told of life two centuries before. He read almost incredulously, hardly daring to believe that once upon a time men had roamed the face of the earth freely. But it was true, and it brought him pain to know that *he* could never do it. When the friend offered another book of ancient times (which he had pilfered from the locked chambers of ancient relics, being a helper in the building) Roy refused it. One had stirred up enough emotion in his fettered heart.

Roy traversed the wide corridors moodily, scarcely noticing the crowds that passed him by, people returning and departing to their shift of work, or paying social calls. He offered dull greetings as now and then a casual friend hailed him while passing. When he reached his home, which he shared with two other young men, he was accosted by his room-mates

"We're going to the Plaza. Coming along, Roy?" asked one of them. The "Plaza" was the community recreation center, of which the city had three. There music was played and dancing went on, and most of the young people congregated there at certain hours for entertainment.

"Not tonight," declined Roy abstractedly. "I feel like taking a little rest."

Thereupon, the two left. Alone, Roy pressed the food button. In ten minutes, a panel opened in the wall to reveal a tray of simple, hot foods. He ate and put the tray back. Then he flung himself on a couch and took the report sheet from his belt pouch. Again he became thoughtful, brow puckered in concentration.

● Life in that day and age was mere existence. It required the combined efforts of every adult man and woman to keep their collective artificial civilization functioning smoothly. Over all earth there were only some two hundred underground cities, each of perhaps a half million people, and all were practically identical, except in the difference of race.

The great war had decimated tens of millions. By the time that the engineering efforts had been completed after the war, many more tens of millions had died from lung ailments due to the lowering of the atmosphere's oxygen content by the dreaded freak fungi. What was left of humanity then, a paltry fifty million, descended into the man-made caverns and therein took up the thread of human existence. In the meantime, the outer surface became a desolation of constantly mutating plant life and its attendant insect life.

After Mankind relinquished the surface, the vegetable hordes came to a certain balance, all forms producing the gas of life for the oxygen-eating fungus. It, in turn, produced carbon dioxide as though it were an animal form of life. But the strange spark of promiscuous interbreeding, having seeped into all botanical life, never died out. The surface became a vast experimental garden where new species and freaks sprang to life and as quickly died to allow new forms to procreate.

It had been hard at first for Mankind in his new home, especially for those of the first generation who had known life on the surface. Much had to be done to

make things function smoothly. Government, of course, changed completely. All the cities were independent of one another, but at the same time, co-operative in things scientific. The old monarchies, republics, and democratic states of the surface were no more. The new rule was socialism of an advanced sort never dreamed of by the surface generations. In this new government, everybody was on practically the same footing. The world-wide predicament leveled caste—obliberated it entirely. Each had his work, without exception. Such persons as kings, nobles, and other parasites of former civilization had no counterpart in the underground life. They had leaders, of course, but they had no dictatorial powers.

City No. 16 was essentially a typical city. Its inhabitants were all white people, descended from American citizens. Its many miles of corridors, rooms, and passages honeycombed a vast expanse of land. The original builders had cemented and reinforced the old Mammoth Caves; but since that time, the steadily growing population had cut new territory from living rock.

Only three prime essentials were recognized in the new civilization: food (and water), recreation, and the continuance of the race. Food was the greatest problem. Underground gardens (although they had a few) were cumbersome and impracticable. So machines had been constructed that could ascend to the surface through air-locks, and these scoured about the verdant plant world interminably, picking up the abundance of fruits and vegetables that the freak fungus had evolved in its endless cross-blendings. Animal life having died out, they knew nothing of meat as a food. They were strict vegetarians. For water they tapped the Echo River, leading its precious fluid to the city by long conduits.

Recreation became a vital necessity because of the ceaseless drudgery that everyone experienced throughout his or her life. But the city could not spare much—resources were so poor. The best they could devise was a group of three social centers, where people could gather in their meager spare time and comfort one another. Crowds give comfort, so does music, dancing, and amateur theatricals. All these were to be found in the underground city.

Continuance of the race was treated with sensible broad-mindedness. Monogamy was the rule, and marriages were prohibited before maturity, which was the age of twenty. Couples lived in private quarters and their children (whose number was regulated by law) with them till they were of maturity. Then, if no marriage took place, the daughters were transferred to new homes, likewise the sons. Unmarried young people remained in company with two other single people of the same sex till marriage took place, when they were assigned new homes, to live in domestic privacy.

Money and competitive business were non-existent. All things were distributed by an iron-bound system, supplying only the necessary things of life. Luxuries were unknown, practically undreamt of, especially by the later generations. Education was extinct as it had been known on the surface. Only the prime things of life were taught: how to run machines, practice trades, perform work of various sorts, and how to live in harmony with the social system. Electrical power—the only type of power used—was obtained from machines that extracted limitless energy from rock atoms and molecules.

Yet in this narrow, trying environment, Mankind thrived and gained slowly in number. Marvelously flexible as the human mind is, the later generations were mildly happy and content, mainly because they knew nothing different. And the intelligent leaders knew better than to open the forbidden library of ancient books and teach history.

● Roy lowered the paper he had been staring at for an hour. He had seen something in its technicality that made his brain swim. He looked at the clock, then dashed from the room out into the corridor. At the nearby intersection, he stopped

before a huge board which was a directory of the dwelling places of all people within a certain area. He found what he wanted and picked his way through the throngs (there were always people in the main corridor except in the late "night" hours).

Finally he swerved from the main avenue and traversed a less frequented one that penetrated into the residence section. At Number 42 he stopped and pressed the door button. He trembled a bit with excitement.

The door swung inward to reveal a young woman who gazed at him with surprise.

"Pardon me," said Roy, recovering from a momentary shock at her beauty, "May I speak to Mr. Delahre?"

"Have you an appointment?" asked the girl, her voice bell-like.

"No. But, please, will you tell him it's very important?"

The girl, she could not have been more than nineteen, hesitated as though in doubt what to do. "My father—I'm Vina Delahre, you see—usually dislikes . . . ." She broke off at the disappointment in Roy's face. "But come in and I'll tell him you're here. Your name?"

He told her and she left the parlor, after offering him a seat, passing to the rear quarters of the residence. Mr. Delahre, sectional head of the entire Food Department, was abrupt.

"No appointment? Send him on his way."

"But, father . . . ."

"You know the rules, and you know my dislike of evening interruptions, Vina. Tell him to get an authorized appointment from his superintendent."

The girl hesitated, thinking of how disappointed the young stranger would be. "But, father, he seems to have something *very* important to say!"

Delahre looked at his daughter sharply. "Strange that *you* should pursue his case. Is he some friend of yours?"

Vina shook her head, blushing, but looked pleased as her father finally said, with a sigh of resignation, "Well, all right, I'll see him."

They strode to the parlor. "Well, young man," said Delahre in his business-like voice, "what is it? You know, this is a poor time to trouble me with any little matter . . . ."

"But it's not a little matter, sir!" broke in Roy. "If you will pardon my audacity . . . ."

"Go ahead," said Delahre with a resigned air, tossing himself into a chair. Roy took a deep breath, looked at the girl to find friendly encouragement in her eyes, and began.

"I work in the Food Department, sir, testing fruits. I've been doing it since a year after maturity; the first year I worked in a surface machine. Naturally, I've seen a great deal of fruits and learned quite a bit about them."

"And you are dissatisfied with the work, and want a change . . . .?" said Delahre, half arising as though the matter were too trivial for further discussion.

"Nothing of the kind, sir!" rang out Roy, flushing. Vina darted a disapproving look at her father. Mr. Delahre sank back in his chair and raised his eyebrows.

"I told that about myself so that you would see I've had considerable experience in my work," continued Roy. "This is what I want to say. Yesterday, looking over my report sheet on a tray of fruit samples, I saw something significant in their analysis. And today I noticed the same thing. I speak of a certain progression of properties in the fruits that lead to a very important conclusion. In fact, my idea is that by the careful examination of a large variety of these fruits—which all have resulted from the cross-blending activity of freak fungi—we may be able to solve certain secrets about the mutation laws . . . ."

At the blank look in Delahre's face, Roy broke off and eagerly pulled his report sheet from his pocket.

"Look at this, sir. It will help you to follow what I will say. You notice on that sheet a list of fruits, all numbered. Now notice: the report gives, along with vita-

min degree and nutrition value, the so-called 'fungi-degree.' Now this fungi-degree may be likened to fecundity, or the power to reproduce. All plants possess it, but in different strengths. Thus, one type of plant will crowd out another in a given area of ground because of its higher fungi-degree, or ability to reproduce rapidly and invincibly."

Roy stood over Delahre's shoulder and pointed as he spoke:

"Now on this sheet, take the items in this order: No. 6, low fungi-degree; No. 17, a bit more; No. 11, more yet; etc., each but little greater than the other. But look at No. 3, fungi-degree *ten times* greater than any other!"

"And the deduction?" urged Delahre, slightly interested.

"This—that now and then the haphazard interbreeding that goes on outside on the surface produces a plant with a high fungi-degree. And I think that systematic research should finally discover a fruit plant with a fecundity so high, that, sown widely, would be able to successfully compete with and crowd out *the freak fungus that sucks oxygen from the atmosphere!*"

● Delahre sprang to his feet with a sharp exclamation. "Preposterous! Unbelievable! Do you think our trained botanists have been idle? Don't you know—surely you must—that they have long hoped to conquer that same fungus, and have never succeeded? How then can you, a mere youth, know of a way?"

"Yes, I *do* know that the botanists tried the same thing. But their methods, to my mind, are basically wrong! They wish to destroy the plant by chemical means—an impossibly gigantic project. My idea, as you can readily see, fights fire with fire. Once we can formulate the mutation laws . . . ."

Delahre waved a deprecating hand. "You speak of impossibilities!"

Roy became white of face. Vina ran to her father to calm his violent opposition. Then Roy spoke. "I can't promise results, Mr. Delahre, but if you will authorize my release from fruit testing and give me a botanical laboratory to work in, I will report in a month's time whether it is impossible or not!"

Delahre opened his mouth for an emphatic "No," but Vina spoke ahead of him. "Father, you must give him a chance! Don't you see what it will mean if he succeeds? It will mean the release of our bondage—the human race will once again live on the surface!"

Roy darted her a look of deep gratitude. The girl went on, seeing her father hesitate, "At least, it's worth a trial. Its success means everything; its failure would cause no harm!"

Delahre stroked his chin reflectively. It was not his habit to grant "whims" to young people who thought they were geniuses. But even his methodical, unimaginative mind could see the truth in his daughter's words.

"All right," he said finally, relieving the tenseness of the situation. "Go through your work tomorrow as usual. But day after report to me at my headquarters in the botanical building. I'll give you a month's release, no more, from routine duty, and assign you a laboratory to work in. Don't ask for more."

With that, the sectional head left the room. Roy, his forehead beaded with the sweat of excitement, turned to the girl. "I don't know how to thank you, Miss Delahre, for your help . . . . I . . . ."

"Don't thank me," breathed the girl. "Just . . . . just suceed, that's all."

Their eyes met. Something, like a little current, seemed to leap between them.

"I'll succeed, then, if only because you want me to." And with that, Roy made for the door. He swung it open and dashed out, to bump full tilt into a man who had been in the act of ringing the bell. Staggering back, the newcomer's face clouded in anger as he looked at Roy.

"You blundering fool! One would think you would come out less blindly!"

Roy's words of pardon choked in his throat. Fist clenched, he took a step forward to avenge the stranger's insulting words, despite his impressive size and weight, but a soft hand held him back.

"Oh—it's you, Max!" Vina stood between them, perfectly aware of their hostility. "Oh, Mr. Cantwell, meet Mr. Spardo . . . ."

Roy dropped his anger and extended his hand, but the other man walked past him into the parlor, muttering under his breath. Vina breathed a farewell to Roy, threw him an enigmatic smile, and slipped back into the room. Roy stared at the closed door a moment, then walked rapidly toward his home.

CHAPTER III

The Search for the "Grand Law"

● "Who is that fellow?" asked Max Spardo of the girl as she stood before him. "And what was he here for?" The green of jealousy fairly radiated from him. He had been a constant caller at the Delahre home for some years.

Vina looked at his frowning face coldly. "He is Roy Cantwell, if you want to know. As for the reason he's here, I don't feel free to discuss his affairs."

Max Spardo frowned still more. "Is he perhaps some new friend of yours that you picked up in the corridor?"

The girl flushed at the insinuating words. "That's an insult, Max Spardo, and . . . ."

"Oh, now, don't take me seriously," retracted the man, seeing he had said too much. He smiled. "Come, forget about it. You know, you promised to have a dance or two with me at the Plaza. Let's go."

Vina shook her head. "If you will excuse me . . . ."

"Then there *is* something between you and that fellow!" cried Max, suddenly angry again.

"You're mistaken!"

"Then why do you refuse to come with me?"

"Because I choose to."

The man, who might be thirty in years, grasped her by the shoulders, looking into her unwilling eyes. "What has come over you, Vina? Till tonight you were only too glad to enjoy my company. Now . . . ."

The girl broke from his hands and ran from the room into the rear chambers. The deserted suitor drew up his lips in fury. "This will bear investigation . . . ."

● It was the second day of Roy's establishment as experimenter in the botanical laboratories of the Food Department, when the door to the room opened and Vina walked in.

"Close that door behind you, because . . . ."

Roy, speaking before looking around, suddenly spied who it was.

"Because what?" said the girl, laughing at his confusion.

"Because I have dangerous fungi spores here, and if they ever got out of this room into the gardens, it would be disastrous." He referred to the extensive gardens outside the building where certain vegetables were grown whose vitamins were very important to human life. These vitamins could not always be found in the products scavenged from the surface.

"But how is it you're here?" asked Roy. "Do you . . . .?"

"Yes, I work in this building, too," finished the girl. "At the sorting tables."

Roy's face lit up. "Then you can drop in for a visit every day!"

"If you care to be bothered," teased the girl.

"Bother me all you want," countered Roy in the spirit of fun.

But this time, Vina was confused. She became serious. "Are you getting any results?"

Roy wrinkled his brow. "No . . . . nothing as yet, but I'm not losing hope. I know, I positively *feel* it, that there's a great secret behind that maze of freak fruits from the surface. And I'm going to solve it," he ended with stubborn finality, as though someone had scorned his efforts.

"I hope you do," almost whispered the girl. She retreated to the door. "Got to go back to work. Our superintendent, although he isn't as strict as some I've heard about, has a sharp eye. I'll try to drop in every day, as long as you invited me to.

But if you still remember the number of our home . . . ."

The door closed and Roy turned back to his work humming. Hardly had he glanced at the array of dozens of report sheets of fruit analysis spread on a table before him—he had been going through hundreds of the reports both that day and the day before—than the door opened again.

Max Spardo, a smile on his lips, approached Roy.

"Mr. Cantwell, I come to tender my apologies for my hasty anger that time we first met. You will pardon me, and shake my hand as a friend?"

Roy gripped his hand, but saw through Spardo's affectation. "Quite all right, Mr. Spardo."

"You are doing research?"

"Of a sort," answered Roy, feeling suddenly unwilling to confide in the man. His manner was too ingratiating, his eyes too beady and inquisitive. He seemed to have Spanish blood in him, by his dark complexion.

"You expect to develop a higher-vitamin vegetable, perhaps?" asked Spardo, again flashing a teeth-revealing smile.

"No, entirely different line than that," returned Roy tersely. Then he pressed his lips together, determined to reveal no more.

"Ah, a secret research!" said the other with veiled sarcasm. He saw the glass jar of spores at the corner of the table. "Fungus spores! How interesting!"

● Roy observed a stony silence, hoping that the other would take the hint and remove himself from the room. But Spardo seemed unconscious of hostility.

"Dangerous things, these spores. I've had experience with them. Their marvelous fecundity is like a blast of atomic power. Are those of the oxygen-consuming variety?"

Roy turned slowly around and faced the man. "We shook hands but a moment ago in friendship. I'd advise you not to endanger that agreement by too much pointless curiosity."

Spardo lost his grin. "Let me tell *you* something, Cantwell," said he, dropping his cloak of geniality. "You might remember henceforth that it will be to your advantage not to cultivate your acquaintance with a certain young lady . . . ."

He was gone then and Roy resumed his work with a shrug of his shoulders. For two days, he had sat slumped over the table examining stacks of analysis, making notes of the results. He knew that he would first need a comprehensive knowledge of the fungi-degrees of many fruits before he could attempt to grow any new varieties. He had put in a request for an experienced horticulturist who would carry out his plans as he made them. The superintendent had promised the assistant the next day. Then the real work would begin.

Next day Vina again visited him for a few minutes, and every day succeeding. And before many days had passed, Roy became an occasional visitor at the Delahre residence. One evening, as he left Vina after a pleasant chat, a figure separated itself from the crowd and touched his arm.

It was Spardo. "Come over to that side corridor," he barked.

Roy followed, determined to once and for all settle matters between them. The fellow seemed to think he had a priority over Vina's affections, and it would be best to teach him otherwise.

"Now, Cantwell, you disregarded my warning . . . ."

"Warning?" burst in Roy with a short laugh. "You are humorous."

Spardo's eyes flashed fire. "Yes, warning. And I give you another: I consider your attentions to Vina obnoxious, and if you persist in them, you will regret it to the end of your days!"

"Is that all you have to say?"

"I'm not a man to trifle with," added Spardo with an ugly laugh.

Roy snapped his fingers and left without another word. But a cold rage smoldered in his breast that the man could be so audacious. "Next time that fellow stops

me, I'll smash his face, and take the punishment for street fighting!"

But for several weeks, Spardo made no further attempts to intimidate the younger man. In that time, Roy, with the help of his assistants, produced various new freaks of plant life, speeding up the mutations with artificial conditions. But the type he wanted seemed to elude his efforts with malign spite. And the Grand Law, as he called it, that regulated the cross-breedings like an unseen spirit, seemed to dance just beyond reach of his probing mind. It was a law that, once known, would guide his future efforts and enable him to produce the type he wanted. And the type he wanted was a blend between a harmless fruit plant and a high fungi-degree freak.

CHAPTER IV

Escape in a Tripod-Car

● "You look worried," Vina told Roy as he entered the parlor.

"I am," admitted Roy. "Vina, I need an extension of time. It's only three days till the month is up, and I see that I can't finish in that time."

It was an unvoiced plea for the girl's help in getting an extension of time from her father. She turned serious eyes on him and they were troubled.

"Father is a stern man. He said that he wouldn't give you more than a month. But I'll try, Roy, not just for your sake, but for the sake of all humanity. Oh, what am I saying!—I must not merely *try*, I must *do* it! I believe in you and your work, Roy, and it must go on!"

"You're just . . . . just wonderful!" murmured Roy. For a moment they swayed toward each other. Then the girl broke from the spell.

"Go now, Roy. Father's in his study. I'll fix it up. I'll be in your laboratory early tomorrow and tell you about it."

Roy left, but not for bed. Instead, he went back to his work. He had done it many times before — worked half and sometimes all night long, or what goes for night in a constantly lit underground city.

He was not there many hours before the door opened stormily and three police entered. "Sorry, Mr. Cantwell. You are under arrest!"

"Good God! What for?"

"One of the gardens is impregnated with fungi."

Roy could do nothing. The police, acting under orders, conducted him to the detention building. Not an hour later, he was called to court. Here it was explained to him that an acre of garden, just outside the building nearest his laboratory, had suddenly become infested with the fungus of which he alone had the spores.

The judge was firm and unsympathetic. "The garden is ruined. It will mean a shortage of vitamins till the fungus is eradicated. They are from the spores in your laboratory. Therefore you are guilty —whether it was accidental or not—of crime. The sentence will be announced within three days. The lightest it can be will be an eighteen-hour working day for the next ten years of your life. If, however, we find that some of those spores have impregnated other sections of garden, your sentence will be *death!*"

Delahre was there, but he never once looked at the anguished youth. It seemed as though he thought the incident overshadowed any possible good that could come of Roy's research. Roy suddenly realized that Delahre had never thought well of the project and had yielded to it only because of Vina's influence. Delahre had never dropped in to see how he was progressing, and had never evinced the slightest interest when they had occasionally met at his home. Probably Delahre thought it only meet that the young upstart who had wheedled a month's vacation from him should now suffer for his folly.

From the court, Roy was taken back to the detention cells of which there were only three. Miscreants were never kept jailed in idleness; they were either sentenced to death, if the crime was heinous, or sentenced to hard labor if the crime was small. Bitterly, Roy thought it over. Could they but know how close he had been to success! Could he but get to Del-

ahre and convince him of it; one word from the sectional head would assure his parole. Too tired to think further, he took the opportunity to catch up on his sleep.

In the morning before change of shift, Vina appeared. Without hesitation she threw herself into his arms, and for a moment, the thrill of it brought the man an ecstasy that rose above his trials.

"Darling, can't they see you are innocent?" sobbed the girl.

Roy lowered her tenderly to a seat. "It's no use fighting it. You know how strict the law is with people who do harm, whether unwittingly or not. When it comes to food—they hold it more precious than human life, it seems!"

"But isn't it ironical," said the girl with dry sobs shaking her, "that this should come when success was so near? I prevailed upon father last night to extend your release, but now . . . ."

Roy suddenly knelt down before her. "Vina, you've got to do more than that! When I'm sentenced and put away at whatever servitude they pick out for me, you've got to convince your father that the work must go on. It means too much, and I have too much faith in it to let it lie forgotten. They must get someone to follow my notes and continue! You, Vina, must carry on after me!"

The girl had listened with tears in her eyes. Now she dashed them away as though a new courage had come to her. "Since there is no other way, then I'll see that it *does* go on."

For a while, they said nothing further. Then Roy spoke. "Vina, did Spardo have any hold on you?"

"None whatever. I suppose he considered himself a suitor of mine, but I never gave him any particular encouragement."

"Do you suppose he would have had the nerve to sow those spores?"

Vina's eyes opened wide in astonishment when Roy told how Spardo had threatened him with dire trouble if he, Roy, kept up her friendship. She sprang to her feet. "That's it! Why didn't I think of it? I thought he had been acting queerly ever since I met you. It *must* be that . . . ."

She flew from the cell as though possessed. Roy passed the day in torment, wondering what the outcome would be. He knew that the girl had gone to accuse Spardo point-blank and probably to bring her father to see the truth.

She returned after the working shift, despair in her face.

"It's terrible, Roy," she sobbed, clinging to him. "Father became angry and resisted my every effort. Spardo—oh, I see him now in all his evil nature—laughed at me. No one will listen to me."

Roy felt his heart sink at her next words: "But the worst of it is . . . . your sentence will be *death!* Father told me . . . . "

● Vina made one more visit to the prison cell, and when she left, Roy's face shone with hope. He looked at what she had left in his hands. It was a tiny blast gun, such as were used in cutting small sections of rock away from solid walls. It had charges enough to disintegrate through the thin walls of his prison. How the girl had procured it, what danger she had defied in pilfering it, Roy could only guess.

He drew in his breath sharply. Would he dare try it? He *must*—for tomorrow they would announce his sentence and three hours later would carry it out. The girl had breathed words of courage in his ear before she left; and words of love. Both inspired him to go through with the hazardous undertaking. He had nothing to lose and much to gain.

He waited till the middle hours of the night shift, when those who were not at work were at home in bed. Carefully holding the blast gun a foot from the stone wall which faced an outside corridor, he pressed the control. Immediately the *spang* of disintegrating rock filled the room with its noise. Roy stopped it then, tiptoed with beating heart to the door, and listened at the ventilation slit for a minute. Satisfied that the guard had not been alarmed, he returned to his position.

Again the invisible pencil beam *spanged* the rock. Roy carefully cut a round groove in the wall; then retraced it again and again, burning deeper each time. The room became filled with the suffocating dust of partially disintegrated rock, but he held the gun in its course despite the pain to his lungs. Finally the whine changed its tone and he knew that the beam had worked through at one point. Another minute and it was done.

He bored the thin beam then in the center obliquely to give him a finger hold, and with a savage tug, pulled the block inward and laid it on the floor. The corridor was a short way ahead, beyond the bend in the rock roof that sloped downward from the prison building. Roy scrambled from the aperture and warily examined the corridor before stepping full into it.

He whirled suddenly upon a figure that came from a nearby indented public bench, distributed along all corridors for those who wearied of walking and wished a rest. It was Vina, much to his relief.

"Good God, girl! You'll get yourself in trouble, being seen with me. You'd better go so that I can get to the air-lock . . . . "

"Roy, I'm going with you!"

The man started, gazed into her firm eyes, then pressed her hand silently. "Come—then it's the two of us!"

It was a daring plan they had conceived. They were going to leave the underground city, via the air-lock, in one of the surface machines and flee for their lives. Roy knew how to run a surface machine, as most every man served in them for a year or more. Once safely away from the danger of the city that had demanded his life, they would formulate further plans.

Warily they traversed the corridors, walking nonchalantly past the few they met, knowing no stranger would realize who they were. Two things they had to watch for—police and friends. Police they avoided by taking cross corridors, and only once they saw a person who might recognize them. That person they avoided as they had the police.

After penetrating some way through the city, their fears lessened, for the police from then on would not know them and they were very unlikely to meet anybody they knew. Finally, as they neared the air-lock, they strode along boldly, for none would question them now.

Soon they traversed the winding passages that ascended toward the surface. It was quite a steep grade, and hurrying as they were, they stood breathless before the air-lock door.

"Shall we wait for the next shift to enter and walk in with them?" asked Vina.

"No. It won't do for us to stand here that long. Someone might get suspicious, or they may give the alarm that I've escaped from prison."

"But the guard inside . . . . "

"I'll take care of him," returned Roy grimly.

Accordingly, he pulled the release handle. Automatic controls opened the door. They stepped into the first of three sealed rooms. When the door behind hissed shut, the door ahead opened. In the two succeeding seal-chambers, the same process occurred, and the final door opened into the drome, a huge room filled with the towering heights of surface machines.

● Due to the impossibility of pushing any ground vehicle through the dense masses of vegetation on the surface, the most practicable affair had long proven to be a housing perched on geared tripods. The housing was a flat cylindrical air-tight chamber, large enough for three people. It contained its own oxygen and engines, thus being totally independent of the city once it was on the surface. From the center of the lower flat base of the cylindrical housing extended the tripod legs, each about thirty feet long, and each geared separately to the engines. With these vehicles, the underground people could ascend to the surface and traverse it, lifting the jointed legs high over the vegetation at each step forward.

This drome contained at the moment but two machines; all the rest being out on duty. The main use of the tripod-cars

was to pick surface fruit and bring it to the city for food. The fruits, picked by the four long dexterous flexible arms or tentacles that extended from the housing, were placed in a shallow pan with upturned edges that completely encircled the base of the housing. Two operators were needed: one to run the tripod legs, and one to run the tentacles; a third was often taken along to facilitate the handling of the arms. But a skilful man could handle them all if necessary.

The two tripod-cars in the drome that Roy and Vina entered were in ready position, that is, placed alongside an overhead balcony. One had but to ascend the balcony by steps, and enter the machines by the open hatches.

The guardian of the tripod-cars looked at them in surprise. It was long before change of shift, and no one was due to go out on the surface.

Roy, lips grim, wasted no time. He had already sent the girl running toward the balcony steps, and he himself advanced upon the guard.

"We're taking one of the tripod-cars. . . ."

The guard sensed something amiss in the matter and ran for the telephone to call the police. Roy leaped upon him before he could get there. The guard gamely fought back, knowing no one would hear his cries. He was a burly man and the crash of his fist knocked Roy staggering back. Recovering, Roy plunged at him, fists pounding. The guard wilted under the rain of blows for a moment, then suddenly grasped Roy about the waist and threw him heavily to the floor. His fist crashed again on Roy's chin, with the added force of stone floor beneath. Summoning all his strength, Roy squirmed to his stomach, arched his back with a jerk, and threw the guard off. With the swiftness of thought, he pounced on him, fingers to his throat, and squeezed till the fellow's face turned purple, unmindful of the jolting blows he received.

Roy, panting and face bloody, looked down a moment at the senseless guard, then looked up to Vina, who stood wide-eyed and terrified, clutching the balcony railing as though about to faint. In another moment, Roy had dashed up the steps and along the narrow balcony.

"Quick, get in! The sooner we leave the city now, the better."

They scrambled into the open hatch of one of the tripod-cars, swung it shut, and sealed it by several turns of a draw-screw.

While Roy snapped the engine button, he motioned the girl to start the oxygen valves, for now they were sealed off from the city's air. The low hum of the atomic motor filled the interior, and in another moment the tripod-car trembled, swayed, then arched one of its legs and lurched toward the outer air-lock. A weaving tentacle uncurled and knocked the handle that controlled the seals to the surface. It was all automatic then. Roy guided the vehicle forward through three air-locks, doors opening and then closing behind them. The tripod-car finally waddled in its jerky way from the air-lock's last seal, which was built vertically in the side of a cliff.

CHAPTER V

Amid the Ruins

● The last seal hissed shut behind them, and before them through the large windows they saw the illimitable stretch of jungle of the surface world. It was night-time now and overhead hung the silvery half-moon. Roy, after a glance in all directions, sent the tripod-car away from the air-locks.

"Get ready for some shaking-up," admonished Roy. "I haven't handled one of these affairs for years now, and we may take a tumble or two."

Both were securely strapped into seats that were held in place purely by a dozen strong springs that hitched to the walls in every direction. The jerky motion of the vehicle caused the passengers to swing and sway in constant gyrations, but the tough springs limited the motion considerably.

To an outside observer, the sight of a tripod-car would be almost laughable. The grotesque picture of a metallic hous-

ing bouncing across the tops of vegetation on its three legs would be ludicrous. At first glance, it would seem impossible that such a top-heavy affair could remain upright, but the animated legs would always plant in the direction of fall just as the whole affair seemed about to topple over. Yet for travel in such a world of unhindered plant life, the tripod-car was ideal. The housing was always high and clear of obstruction, and the thin legs, with their tri-pronged ends, could always cut through the vegetation and plant firmly into the ground to give the necessary balance. And because of the length of the legs, each forward step was several yards, giving the vehicle a respectable forward speed.

Roy fingered the multitude of button controls with a somewhat unpracticed hand. Then the constant swinging of his body bothered him, although he knew he would soon get used to it. But before he could get into the full swing of the manipulations, he made one slight mistake. He did the only thing left, then, and straightened out the machine's legs to give their toppling crash a horizontal pitch. The world seemed to turn upside down and they were swung viciously sideward, the springs straining them back. With a sodden crash, the housing landed amongst the vegetation and bounced and rolled a moment on the cushion of decaying leaves over the ground.

Roy looked at Vina's white face and laughed shakily. "No harm done! Good thing they make these housings strong, and good thing the vegetation is so thick. It cushioned our fall."

A tripod-car losing its balance in unskilled hands and toppling groundward was nothing new. It happened often and very seldom the sturdy vehicles were harmed by it. But the process of once again raising the housing into the air was quite a trick. Once at rest, the strong springs drew Roy back to position, and he reached out his hands to the buttons.

Two of the legs had to be doubled up and then drawn to the top side of the housing, which lay on its side. Then power applied to straighten these two legs slowly raised the housing off the cushion of decaying leaves. It was like a person flat on his face pushing his head from the floor by use of his arms. It was done without a hitch, but once upright, Roy planted the tripod-car firmly and left it that way.

"Let's have a breathing spell, and while we're at it, we can decide what to do."

He looked at the girl. "Vina, we're outlaws! My life is forfeit once I step into the city, and you . . . . oh, why did I ever let myself drag you with me!"

"Drag me with you? Roy, I came willingly, and I would do it again, because"—she had unstrapped herself and now flew into his arms—"because life without you wouldn't mean a thing to me."

For a minute, they remained in the ecstasy of mutual adoration. Then Roy pushed her gently away. "But now, what to do with ourselves? We can't live in this tripod-car very long, a few weeks at the most—then the oxygen tanks will be empty. And outside . . . ."

They glanced out the window and shuddered. A nightmare world of jungle. And just outside the walls was a horrible choking death.

"Roy, we could go to some other city in this tripod-car!"

Roy nodded. "Seems about all we *can* do. City number 17 is about five hundred miles away—if we can find it."

"Do you suppose we'll have any trouble getting in?"

"I wonder myself. It will look odd to them that we should come there . . . Wait, I have an idea! We'll go to city 17, join in with a crowd of fruit pickers and calmly walk in with them. Once we're safe in the city, we can somehow invent excuses for our presence."

Vina smiled her relief that it would be so easy. But Roy had fastened his eyes on the radio pilot light. It was flashing interminably, meaning that a message was being broadcast to the world. He snapped on the control and twirled the dial, his heart beating fiercely in sudden apprehension.

" . . . . escaped from this city, No.

16, in a tripod-car," came the voice, "whose number is 109. Keep watch for it and capture him if possible, or else notify the authorities of this city. A girl, Vina Delahre, is also with him. She is also to be captured and returned to this city, to be punished for deserting her work and for aiding the escape of a criminal."

Then the message was repeated. "Notice to all cities! Roy Cantwell, sentenced to death, escaped from . . . ."

Roy snapped off the radio. "That kills our plan to go to city 17!"

"They call you a criminal!" cried Vina, tears of anger in her eyes. "Oh, if they only knew . . . ."

They remained in dejected silence then for long minutes. Suddenly a strange light glowed from the man's eyes. "Vina! There is one alternative to going back and surrendering. I've read a book of previous surface life and know they used to have wonderful big cities. If we can get to one of those and find some sort of shelter, I can continue my work! I have learned enough about horticulture to do the breeding myself. It will be hard without my notes, and may take a long time—maybe longer than our oxygen will last—but we can gamble on it! Only I think I ought to return you to the city. Your punishment would be light, while I could go on working alone . . . ."

● The negative glint in her eyes and the firm way she shook her head cut the man short. "With you I go!" And so it was.

They wandered for days, eating fruit that Roy flicked from trees with the tentacles, sleeping short hours, searching, searching for a haven. They took their course by compass, so they would not lose themselves, and switched at right angles periodically so as not to draw too far away from the city.

Hope fell to ashes, but one day it flamed anew. In the distance they saw—it was bright sunlight—a break in the level jungle. Drawing near it proved to be what they had long sought, one of the crumbling ancient cities. The giant tripod-car picked its way along torn pavements, tumbled buildings, and heaps of débris, the toll of two centuries. Roy searched the shocking desolation with a keen eye.

Finally he stopped the tripod-car beside a section of jagged wall that yet stood erect. "In that building," he pointed, "we may find what we want." Donning oxygen helmets, they stepped out into the cool air of spring and clambered down the jagged wall to the ground. They had to thread their way past heaps of piled masonry.

"To think," said Roy, his voice reaching the girl through a vibrating diaphragm, "that a long time ago our ancestors lived here and roamed these very streets. To think that once the whole earth was free to them; they could wander where they wanted to without coming up against stone walls and barring air-locks!"

To these two it was strange indeed to picture a city of the surface as it might have been. Their restricted underground lives had pressed their thoughts together so that the sight of open sky above them almost made them shrink in instinctive fear. A mind used to four walls feels lost when there is no roof.

But Roy was practical-minded. He entered the yet intact doorway of the low stone building that had first attracted his eye. Past a small vestibule he found a large room whose cement floor had stood the ravages of time. Its several windows were devoid of glass and the wind blew in unhindered.

"This will do," said Roy. They ate first of the large store of fruits they had in the tripod-car, whose juices also satisfied their thirst, then talked over the future.

"Right here on this cement floor we'll spread a layer of dirt and start our cross-breeding. I'm going to write down from memory as much of my notes as I can. We'll work ahead from that. For food and water, of course, we've got fruits. If we run short, you, Vina, can go out with the tripod-car and get more. I'll point out to you certain types of fruit that are never poisonous, as I know from years of testing. During the day, the temperature

is warm enough. Nights we'll spend in the tripod-car. Since from now on we'll breathe mainly in our helmets, our oxygen consumption will be economical. If any of those surface storms rages around here, we'll be protected in this building. And once we finish our experiments and have the type of plant I want, we'll be able to buy our freedom back from the law!"

CHAPTER VI

Spardo on the Trail

● Immediately, they set to work, each knowing their lives depended on it. Getting dirt into the building was a laborious task. Roy, using a withering gun with which all tripod-cars were equipped, burnt to ashes the grasses and bushes growing around the building. Then he scraped away the humus layer and scratched the dirt loose with a spike of broken cement. This he loaded on the broad leaves of certain plants, and Vina carried them in to the experiment room.

Two days of this monotonous work—however not much more monotonous than work had been in the city—and Roy called a halt. A twenty-foot square of virgin soil was now spread on the floor six inches high, suitably criss-crossed with narrow footpaths. Over the whole he played the withering pistol for hours to make certain that all seeds and spores were destroyed. Then for a day they scoured the countryside with the tripod-car, picking up the spores needed for breeding. These Roy wrapped separately in large leaves, labeling each with a slip of white bark scratched with identifying signs.

Then the work began. To a botanist of centuries before, the processes would have seemed miraculous. His eyes would have popped at the rapidity with which the fungi grew, and at their strange and varied forms. He would have wondered what miraculous form of life imbued the plant life of that time, that they completed life cycles in short days, sometimes hours! But to Roy it was not strange. He took it as natural. To him the old forms of plant life that grew before the advent of the freak fungi, would have seemed dead and ungrowing. For all the vegetation, in a greater or lesser degree, of that age had absorbed (by the activity of the blender fungi) the amazing fecundity of the first freak fungus. Where in earlier times, the plant species had bred according to earth's seasons, now they bred at any and all times, except when the greatest rigors of winter checked them momentarily.

And Roy's cross-breeding, which would have been years of work in the twentieth century, took place in just weeks. And the rapid-growing vegetation that grew in his century would have choked and obliterated pre-freak fungus plant life in no time at all. That was why the earth was covered with a vast jungle of vegetation. Genesis in the botanical world had speeded up a hundredfold.

Had Roy unfolded his plans to a botanist of surface times, that he expected to evolve new freak forms of plant life in time measured by mere hours, the latter would have laughed aloud in derision. But that was what he did.

A week of constant application produced a freak that he reasoned should have a high fungi-degree. To test it, having no facilities to make chemical tests, he had to plant it in a square foot of soil along with the terrible oxygen-consuming fungus, to see which would grow the faster and produce spores the quickest. While waiting for these results, he began again, breeding the new freak with a harmless fungus that had a high fecundity.

His former work at the city had placed him at the threshold of the riddle he wished to solve. But a few weeks more and he would have formulated a process of interbreeding that could produce at will harmless vegetation with a fungi-degree so high, that, if it were sowed in large numbers over the land, would successfully compete with and crowd out the oxygen-eating fungus which now occupied most of the land surface of the globe.

Working now under poor conditions and trying circumstances, he yet made progress. He knew that suddenly, some day—if their oxygen did not run out be-

fore that time—he woud fall upon the Great Law of interbreeding with freak fungi. Then it would be easy.

Vina worked like a slave with him, disregarding the troublesome things that made life so irksome. The oxygen helmet chafed at times, the air was once blue-cold, again sweating-hot. Used as they were to constant temperature, the weather changes made them miserable. Only their splendid health, for the underground cities' inhabitants were all dieted and medicined to almost perfect health, held them up.

But there were moments of happiness, too. They made it a habit to watch sunrise and sunset, whose beauty struck exquisite joy-pains in their scenic-starved souls. During warm rains they gamboled in the open, delighting in the sensation of feeling pelting raindrops on their skin. A thunder and lightning storm thrilled them once with its majestic power, sights and sounds unknown to most people of that time. And no less than all other of their few joys—they had each other.

It was three weeks after their escape from the city that Roy turned a grave face to Vina, after examining the oxygen supply. "Only enough for a short week, Vina. Then, if I fail in my work, we must either die of asphyxiation out here, or deliver ourselves back to the law."

"Do you . . . . think we'll succeed before then?" asked the girl tremulously.

Roy looked at her weary eyes. He pursed his lips as though what he was about to say might hurt. "Yes and no. The fact of it is, Vina, that I've gotten this far only to realize that without the results of my work in the city, I can't finish in time. I am positive, I simply *know*, that if I could get the spores of a certain freak plant in my city laboratory, and breed the plant with the one I've got here, it'll be over, or very nearly over."

He looked out of the window in the tripod housing in which they sat and viewed the ruins of the ancient city with an eye that suddenly took fire.

"Vina, there's one thing left to do. We must go back to the city! I'll sneak in somehow and get those spores I need. If they are destroyed and if my notes are gone, then we'll sneak off with a different tripod-car and that will give me another month to finish this work here."

● When the giant outer seal to the city opened to allow a group of fruit-pickers to enter for change of shift, a scurrying figure darted in at the corner, unseen by the occupants of the tripod-cars. And when a large group of people entered the triple inner seals, bound for home, Roy was with them, having thrown his oxygen helmet into a dim-lit corner. Boldly he entered the city proper with the group, then unobtrusively branched away as did many others.

He was hardly recognizable as the Roy Cantwell of a month before when he had flown from the city, a marked man. His hair was longer and cut in a different style (by Vina), his complexion was darker, and his face and figure were emaciated. For this reason, he felt a great security, though he knew were he once recognized, he would be hunted down. Furthermore, and this lent him great courage, none would expect him. They must by now think him dead and lost in the surface jungles.

Yet he used caution, scanning the people ahead for possible acquaintances whom he would have to avoid, and passed the police with face turned away. He penetrated directly to the botanical building, growing more wary as he drew near. Finally it lay before him. He seated himself on a public bench as though merely resting, but ran a careful eye over the place. From where he sat, he could not see the one open window that led to the room in which he had carried out his experiments, it being beyond a corner, out of view from the corridor.

Roy thanked kind fate that the window did not face the corridor. It became his one chance, therefore, of getting in, as it would have been too dangerous to walk in the entrance. Too many of the workers would see him and give an alarm. But what if the room were occupied? Suppose

someone else had been installed in there by now?

Roy set his teeth. No backing out now; he'd go in there and take his chances. If worst came to worst, and the alarm were given, he could yet vanish in the crowds of the thoroughfare. But then he would be in constant danger.

From the side corridor, which was quite deserted, Roy crept eagerly to just beneath the window and listened intently for sounds of activity within. There were apparently none. Placing hands on sill, he drew his eyes to the level of the room and peered in swiftly. Empty!

Another swift motion and he had swung his body into the room. He almost cried aloud in joy then. On the table, unmolested, stood the tubes of spores that he had produced. Swiftly he selected three of them, slipped them into his belt pouch, and looked for his notes. But they, unfortunately, were gone.

First gazing out of the window to see that no one had detected him and waylaid him, he leaped lightly to the street level. Hardly had he entered the main corridor and joined the thronging crowds, than the workers in the botanical building poured out. It was change of shift! It was best for him to get away quickly, lest one of them spy him and recognize him.

Rapidly as he dared, he walked away from the place in the crowds. He breathed easier when he was out of sight of the building. But he didn't know that a pair of beady eyes had seen him as he shouldered his way in the crowd. Nothing warned him that Spardo, having accidentally spied him when leaving the building, had taken up his trail, a triumphant smile on his lips.

And Spardo followed him without trying to catch him up, already hatching his own little schemes. But when Roy ascended the winding passages to the air-lock, Spardo leaped upon him, knowing that the glory of capturing the outlaw single-handed would be great. But he had underestimated Roy's strength, even though he himself was taller and heavier. Crushed to the floor by Spardo's onslaught, Roy wriggled like an eel from the bigger man's grasp, and pounded hard fists into his face. With muttered oaths, Spardo attempted to grapple with him and bear him to the floor again. Roy saw his plan, suddenly leaped sideways, and swung his fist with desperate fury. Spardo slumped to the floor with a groan.

After a hasty glance at the limp man, Roy dashed up the passage and pulled the inner air-lock lever. Traversing the three seals, he burst into the drone like a mad bull. The guard, a different and slighter one than he of a month before, fell beneath Roy's fists like a sack of feathers.

Roy knew that the alarm would be given soon. He must get out quickly. He dashed up the balcony, entered a tripod-car, and brought its engines to life. In a few moments he had traversed the outer seal, and swayed out onto the surface.

But hardly had the seals closed, than Spardo dashed into the drome. He had only been stunned by Roy's fist. One look at the senseless guard and Spardo knew what had happened. He ground out his rage and disappointment. Roy had again escaped! And when he, Spardo, had almost had him!

A sudden thought sent Spardo scurrying up the balcony and into a tripod-car. Its machines whirred to life and the vehicle lumbered through the locks, out into the open. It was darkening twilight on the surface, and Spardo looked hastily around. His eye caught a moving object, and an exclamation of pleasure escaped his lips. It must be Roy in his tripod-car!

Spardo chuckled. It was simple now. He would radio the city, tell them what he had found, and they would send out police with arms. Spardo would follow the quarry at a distance and keep the trail so that the police could catch up. But even as his hand reached for the radio switch, he turned pale. The other tripod-car was coming at him, as though to put him out of the way.

Spardo became paralyzed with fright; panic swept into his mind. Roy, maddened outlaw that he was, was going to attack him! It was only too obviously so

by the way the oncoming tripod-car lumbered up, ominous and without pause.

CHAPTER VII

The Battle of the Tripods

● The strangest battle in all history took place then. The battle-ground was not many hundred yards from the corridors of the city and its teeming life. Yet none knew of it, for the guard in the drome was still senseless.

Roy, in his tripod-car, advanced upon Spardo with the red of rage in his brain. This man, who had before crossed his path, was now in a position to ruin all of his plans, if left free to arouse the arm of the law. The one thing to do was to put him out of the way.

The advancing tripod-car, rumbling up like a clumsy giant, stopped short barely five yards from the motionless one, which seemed like a gladiator bereft of fighting spirit. Suddenly a tentacle lashed from the attacker and whipped around one of the other's jointed legs, just below the housing. A backward tug and the defender's vehicle swayed a moment in delicate unbalance, then miraculously righted itself.

The defender tripod-car now seemed to come out of its trance. From it whipped a tentacle, even as the attacker curled another of its flexible arms. Both tentacles gripped legs of the opposing machine, and for a moment, there was a grind of straining gears as each sought to upset the other. Spardo's tripod-car suddenly lashed out another tentacle, but it was met halfway by an arm from Roy's machine. They curled upon each other and tugged frantically, filling the quiet air with metallic groans.

Suddenly they were apart, the tentacles unable to hold against the strain of tugging legs, and each tripod-car swayed drunkenly to maintain equilibrium. Spardo recovered first and rushed to push Roy farther off balance. But Roy, who had handled a tripod-car now for a month and was skilled with it, side-stepped just in time. The lumbering attacker went past, stopped short, and swung ungracefully about to find the other already upon him. Tentacles lashed out again and curled about legs, and once more the engines rose to powerful whines as titanic leverages were applied to the flexible arms. This time they did not break immediately, and Roy sent a second tentacle curling about another of Spardo's tripod legs. But Spardo, too, flung out another weaving arm. A moment of terrific strain, then both reeled back, dangerously near to toppling off-balance.

Recovering again, the machines stood apart for a breathless moment, like two wary beasts. Suddenly Roy's tripod-car surged forward as though to crash directly into the other. Spardo swung back a step in panic. But when the oncoming machine seemed about to collide, its two front legs buckled.

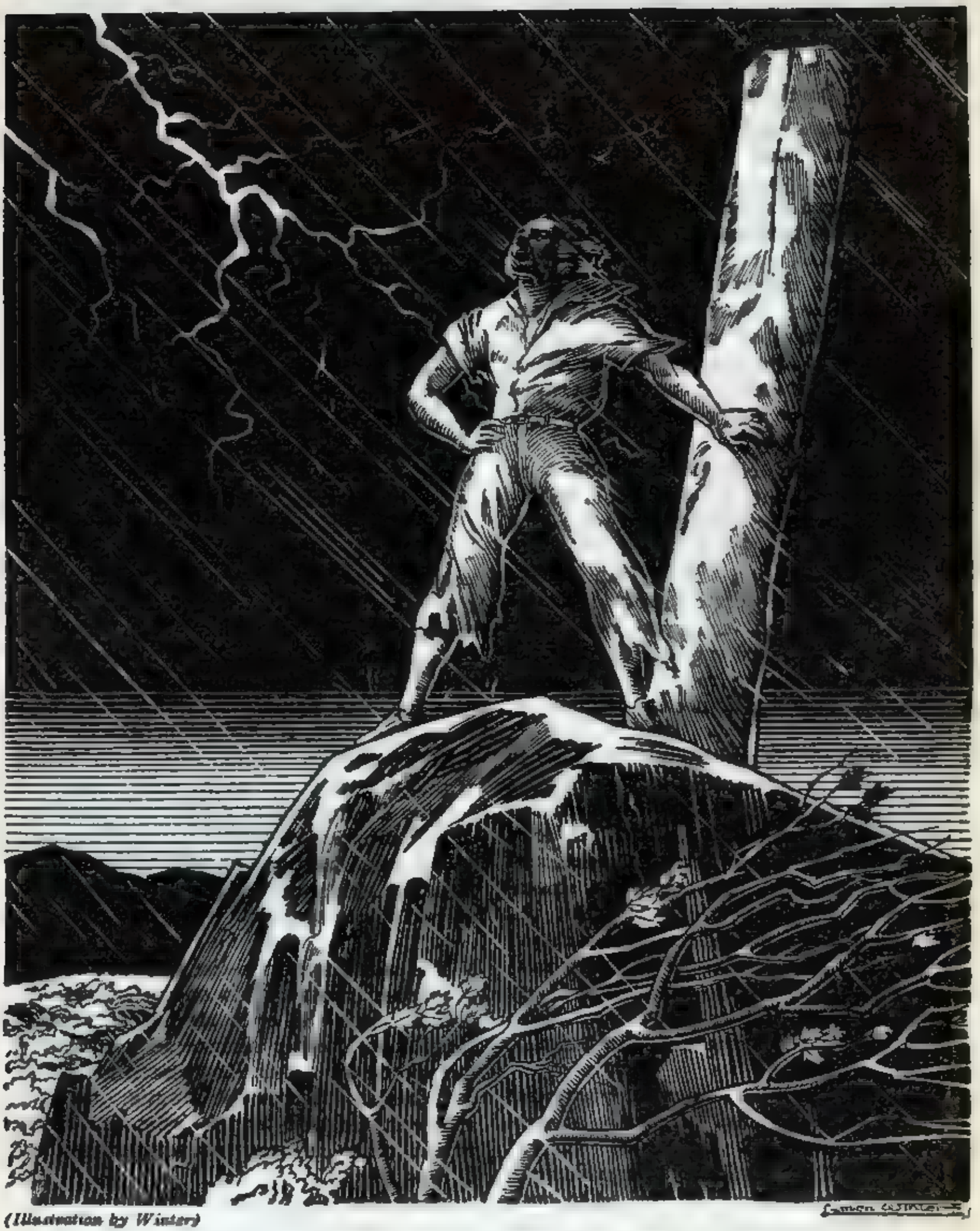
Too late Spardo saw the maneuver. From the housing of Roy's vehicle, which now was swinging in a slow arc low to the ground, shot a tentacle, curling around the lower joint of Spardo's tripod-car leg. Roy's machine straightened its two doubled legs rapidly, jerked upward with its tentacle, and Spardo's machine flew into the air to crash with a frightful noise.

Roy watched the housing of the fallen tripod-car, saw the glass split from the terrific shock, and saw Spardo's body fly out of the interior with broken straps and one broken spring clinging to him. Roy took one glance at the huddled figure, then turned to his controls.

● He sent the tripod-car away from the crashed ruins of his enemy's machine, and out into the open stretch of vegetation. Soon another surface vehicle loomed out of the dim dusk. Roy placed his housing close to that of the other's, and in a moment, a figure leaped from one hatch to the other, wearing an oxygen helmet. It was Vina.

"Oh, Roy! . . . thank God you've won! I saw the whole thing from here. I so wanted to help you, and yet I was afraid to come near . . . . "

(Continued on page 789)



(Illustration by Winter)

And Bancroft still stands upon the mountain.

THE SUBLIME VIGIL

By CHESTER D. CUTHBERT

● This is undoubtedly one of the most beautiful stories that we have published in a long time. It is a rare tale that can combine logical scientific theory with picturesque portrayal and produce such an exquisite story as the present one. The science in most stories prevents them from becoming masterpieces of true fantasy, and in some it gives them a cold touch.

In this story, the science is introduced after the reader's interest has been built up and brought to a pitch until he is over-eager to learn the explanation of the mystery. This truly portrays what we mean by a NEW story, as has been explained in our policy. The science here has never been used in any story before, to our knowledge, and is refreshing in its convincing originality.

● It is storming outside. Jagged flashes of lightning are followed closely by the crashing peals of thunder reverberating in the heavens. Thor is armed with a sledge-hammer tonight; and the sparks flying from his anvil are bound to mark with destruction things in the world of man. His armor must be tough and stubborn to work upon, for Thor has been busy for hours.

I have just returned from looking out of the east window. Bancroft is still standing upon that high bold crest of Mount Arden. He stands motionless, facing the west whence comes the storm. The wind blows his hair and beard awry; it tosses the rags of his clothing until they flutter behind him; it bows the stately trees on the mountainside at his left; but it does not make him turn his broad back to its chilly blasts. The rain drenches every leaf and every blade of grass; falling on the mountain, it gathers into little rivulets which tumble down the slopes; but Bancroft pays it not the least attention. For twenty-five years now, he has stood upon that crest, day and night, summer and winter, year in and year out, in every kind of weather. Sometimes I think that only a lightning blast will end his vigil; and that is why I am always uneasy when it storms.

Often through the years I have tried to conjecture why he stays upon the mountain. So, no doubt, has everyone who has ever heard of John Bancroft. Only today did I learn the reason. And it is so strange that I have decided to write down all I know concerning Bancroft, in the hope that, with all the particulars freshly before me, I may be enabled to understand.

I can recall having heard discussion of John Bancroft ever since I was old enough to notice anything. Even before I could puzzle over what was said of him, these sayings created within me an awed, half-apprehensive wonder.

His origin is enshrouded with the mystery shadowing the greater part of his life. He was apparently about two years old when he was left on the steps of an orphanage in a town ninety miles away from Millburn, where I live. As a child, he was reserved and moody, holding his own with any of the children among whom he was placed, but seeming not to care to join them in their games or friendships. His constant attempts to escape from the orphanage caused trouble which made his lot no easier. He had run away perhaps a dozen times before he was fourteen; and on the last occasion proved to have hidden himself so well that a week's search failed to locate him. Finally declining to concern themselves further with so intractable a charge, the orphanage officials left the matter in the hands

of the sheriff, who, being of indolent disposition, decided to leave well-enough alone—at least until the lad had done something to make his recapture a necessity.

From that time, John Bancroft became an outlaw in so far as ordinary citizenship was concerned. In all the country visible from the top of Mount Arden could be found no one who had failed to hear rumors of him. He was about sixteen years of age when I was born. Even then people connected most mysterious happenings with his little-known life.

No normal boy could hear so much of Bancroft without wishing to see him. But his few appearances in Millburn offered me no chance of having my hopes fulfilled in that respect. Usually he visited the general store at midnight of a Saturday—long after my parents had constrained me to retire—and stayed only long enough to obtain the supplies he required. Always somber and taciturn on these occasions, he spoke of nothing upon which idlers could conjecture; and it is little wonder that stories of his supposed misdemeanors lack sound evidence to support them.

Disregarding the warnings of my elders, as I passed from childhood to puberty I used every available opportunity to attempt contact with the mysterious figure dominating my more thoughtful moods. Long hours were spent in lonely jaunts among the trees with which the east and south slopes of Mount Arden are forested, for I heard that Bancroft often spent months there—months during which he was never seen. But my campfires must have warned him, for he stayed apart from those places wherein I hoped to find him.

My twelfth birthday had passed before I saw him. With a campfire in mind, I was gathering dry twigs from along the bank of the stream which runs through the woods. I had thought myself alone in that part of the forest, and was surprised to hear voices at no great distance. Running quickly toward the sounds, I parted the bushes and stared, fascinated, at the most dominating figure I had ever seen.

● I knew at once that it must be John Bancroft. Slightly over six feet in height, I judged him, compactly built, yet seeming slender and poised for ready action. Had it not been for the breadth, his head would have appeared massive. At the moment, it was inclined a little forward from an upright position on the well-molded column of his neck. His face was tense: jaw outthrust; nostrils of his long, straight nose distended; dark eyes flashing; lips compressed into a firm line.

"Get away from that dam!" he had said. I looked for the cause of his command. Tom Waters, a transient well-known in the district, was standing beside a dam recently constructed by a family of beavers. In his hands was a long pole. With this he had demolished their house of mud and twigs, and it was apparent that only Bancroft's arrival had halted the destruction of the dam.

That Waters was in an ugly humor I knew at once from the sullen glare with which he stared at Bancroft. His eyes were bloodshot, probably from a recent drinking bout. In a truculent tone he snarled: "They been muddyin' up the creek for days, now, an' I'm gonna stop them if I have to kill them all!"

"You're going to get out of here! And if I catch you near this place again, I'll boot you out of the country! Get out!"

"You seem to think you own this place! Why, you oughtta be in jail right now! I got as much right around here as you have. An' I'll bust this dam if I like!"

Waters placed the pole against the top of the dam and began pushing it into the stream. At once, Bancroft leaped. Twisting the pole from the other's grip, he hurled it away. Blocking the blow Waters launched, he grasped the tramp by an arm and a leg, braced himself, whirled—and Tom, after describing an irregular arc in his flight, plunged flounderingly into the stream. He was carried downstream by the current, and when he came to the surface I saw that his face was contorted with pain. The force with which he was flung seemed to have broken his leg, for

he trailed it uselessly as he tried to make the shore.

Barely had I noticed this when I heard a second splash. Bancroft had leapt into the water and was swimming toward the tramp. Disregarding the man's frantic struggles, he towed him ashore. After wringing most of the water from their clothing, Bancroft shouldered the tramp, who had fainted from pain, and started for the village four miles westward around the base of the mountain.

I had not been noticed. Camping plans forgotten, I followed Bancroft at a respectful distance. Only once on the long journey did he pause for rest; and my admiration for his strength increased with every step he made.

My father, Dr. Johnson, was the village physician. Bancroft carried Waters right to the door of my home on the outskirts of the village, and I dashed forward to open it.

"Thanks, kid," he said, smiling as he saw me for the first time. "Get the doctor, will you?"

At that moment, my father, who had heard us, entered the room. Bancroft laid his burden on the couch and, turning, said laconically, "Broken leg, I think." As Father bent to examine the tramp, Bancroft beckoned me outside.

"My name's Bancroft, if the doctor wants to know. Give him this." He extended a ten dollar bill, a lot of money in those days. "If Waters wants to see me, he'll know where to find me."

There was no sign of fatigue in his upright figure as he walked away. I stared after him until he was out of sight, too overcome by the tremendous events of the afternoon to move or speak. But within myself I sensed a new dignity. I knew Bancroft—he had spoken to me!

I started as I heard my father's voice behind me.

"Where has he gone?"

I pointed toward the path rounding the base of the mountain. Then I handed him the money and told him what Bancroft had said.

"He's a queer man," he muttered, half to himself. To me he said: "Waters' leg was only dislocated. He'll be walking around pretty soon." He turned to go into the house.

The following day I chanced to see Waters boarding a train. He limped heavily, but with the aid of a crude staff, he moved about quite easily. I never saw him again. Months later, people noticed his absence; and when they heard of how Bancroft had brought him to my father, their discussion of the incident soon gave rise to the rumor that he had persecuted the tramp until the man had fled the district in terror. This rumor was on a par with others concerning Bancroft, and since it merely heightened his appearance of mystery, I said nothing to reveal the truth of the matter. For a long time, I basked in the limelight at school, for I could boast to my fellows of knowing the man who was, in the minds of us all, our ideal.

The Mysterious Disappearance

● Six years passed before I saw Bancroft again. Of these, one was passed in school at home, one in a preparatory school in the East, and the remaining four were spent in Berlin, where I pursued certain studies that my father felt were necessary to my education.

While I was in Europe, my mother died. To the usual strangeness of homecoming after a long absence was added a sense of loss at realization that life would no longer hold the brightness that she had given it. My father was changed; he seldom joined in the social activities which had formed a part of his life while Mother lived, but spent his time alone in his library—this room in which I, too, have learned to ponder mysteries.

On the second evening after my return to Millburn, I caught sight of Bancroft. He was hastening along the main street, and turned toward the home of the Reverend Wilson. Burning with curiosity, I took the first opportunity to ask my father what had occurred to lure Bancroft away from his beloved forest.

He was seated in an easy chair before

the huge fireplace, resting after his day's rounds. The fact that he was not reading told me that his daily grind must have placed a severe tax upon his failing vitality. Though I felt that I had intruded upon him at a time when he wished to be alone, he smiled thoughtfully and showed an immediate interest in the subject of my question.

"Never got over your enthusiasm for Bancroft, eh?" he asked. "Let's see, now. He was about sixteen when you were born. You're eighteen now. That makes him thirty-four. And for nineteen years Bancroft has been a cause for wonder among the people of this village. He's been vaguely accused of almost everything but murder, yet I cannot recall a single instance wherein his guilt has been more than a matter of hearsay. It speaks a great deal for the man's personality that interest in him, so seldom fed by anything tangible, has never died in that time. I think it may be that people like to blame anything they don't understand upon the man of whom they know the least.

"Well, things have altered in the last year or so. I've heard that it began when Johnny Parker got lost and Bancroft found him and took him to school. Reverend Wilson's niece, Alice Gray, has been teaching there for about two years. Though a quiet little creature, she's the prettiest girl living around here. I was a bit surprised when Bancroft started calling on her—she's not the type I should have thought would attract him. And I respect Bancroft for his choice.

"But I was even more surprised to discover that Alice returned his interest. His qualities are exactly the opposite of those which one might expect would recommend him to her. Her influence is changing Bancroft. Just the other day I heard that he had started a homestead on the other side of the mountain. I suppose they'll be married soon, and then people will have to find someone else upon whom to blame things that mystify them."

It was as though I had found to be an illusion something in which I had had perfect faith. The wish to reflect upon Bancroft's new interests stayed with me for many days. Wandering through the forest one warm, bright afternoon, I found myself near the dam where I had first seen him. It had remained undisturbed through the years and I wondered how much it owed its immunity to the watchfulness and care of Bancroft.

Feeling drowsy after a while, I sought a shady spot beneath a tree at no great distance, and lay down. When I awoke, a glance at my wrist-watch told me that it was after six o'clock. I sat up, thinking to hasten home before supper should be served. It was then that I noticed Bancroft and Alice Gray seated upon a mossy bank above the dam. I could not move without disclosing my presence, yet I could hardly remain where I was. While I hesitated, their voices came to me.

So softly that I barely heard the word, Alice whispered, "Yes."

Bancroft sprang to his feet. Grasping her arms near the shoulders, as one might grasp a child, he swung her to a standing position before him.

"Alice—" he choked. "Alice—you mean you'll marry me?"

● Suddenly his arms were around her.

And I have never in all my life, seen so much happiness in a man's face. I turned away as he bent to kiss her.

Alice said something I did not hear. Bancroft's reply came to me: "Of course, darling. I understand."

I dared not move as she walked away toward the top of the mountain. Bancroft took the path leading to the village and I followed, expecting to cut ahead of him at some fork in the way. No bypath could I discover, however, so I was forced to follow him or face his questions should I attempt to pass.

In half an hour, we rounded the base of the mountain. Bancroft stopped and faced about, looking up to its great bald crest. I, too, looked up. Outlined against the blue sky, face and figure glorified by the rosy light of sunset, Alice looked westward. Somehow I understood. She was revealing her happiness to the setting sun, looking

upon it as though it were carrying away the years of her maidenhood.

The picture she presented was so beautiful that I could not look away. Her long white dress billowed in the light breeze and her golden hair, which she had unbound, tumbled in waves almost to her knees. She was in full sight of the village far below, but it did not exist in her consciousness at that moment. Her face was calm, yet it glowed with an inner fire that would have astonished the friends who thought her so colorless. And in spite of her utter abandonment to emotion, a sweet dignity seemed to permeate her entire being. I was about to look at Bancroft when I sensed that Alice was in shadow. As I re-focussed my attention upon her, I saw that her face had lost its wondrous color. Her eyes opened wide, and she seemed about to scream in fright. No sound came to us, however, for she—disappeared.

I can say nothing to make my meaning clearer. She disappeared.

Bancroft cried out as though his heart were being torn from his body. Eyes fixed where she had stood, he started up the steep side of the mountain. Through bushes, over slopes of shale, along shelves of rock, ever ascending, he climbed. I ran to the ravine directly under the place where the mountain crest was outthrust. And though I searched for hundreds of yards about, I found no trace of Alice. It was hardly to be expected that I should, for I had not seen her fall.

Some hours later, most of the men of the village had joined the search. After two days during which no slightest clue was found, the search was continued only intermittently. Men knew it was hopeless in the face of the known circumstances. And they could make nothing of my attempt to explain the shadow that had been cast upon Alice. Old folk whispered of eery beings; superstitious tales raged rampant about the country and many theories were advanced; but none of these things served to produce an explanation of the mystery.

For a month, Bancroft haunted the mountain, searching, ever searching. People spread the rumor that his mind was affected by his loss, for he rested little, and was abroad at his eternal search both day and night. All in the village wondered and speculated. People truly mourned, for Alice was beloved of all, but their sympathy for Bancroft was tempered by a reserved wonder concerning what he might do. They could not forget that he was still the man of mystery.

One night he disappeared. Amid the most terrific storm ever experienced in that part of the land, he silently went away. None saw him go; and for ten years no word of him was heard.

A day came, after the passing of the decade had made of him little more than a memory, when talk of him once more was bruited about the country. Early one morning, when fog was rising along the mountainside, an awe-stricken farmer came to Millburn, bearing an almost incredible story of Bancroft's return. With the speed of lightning, the word spread.

My father had died a few years previously. I had married and had taken over his practice, all thought of a specialist's life being forgotten in the demands of my small, but growing family. But even the intervening years and their events had not served to erase my wonder of Bancroft; and so I hurried to gather the news.

The Sublime Vigil

● The farmer said that Bancroft was standing erect upon the crest from which Alice had disappeared. And upon his face was graven the awful patience of one who is determined to deny, for centuries if need be, any thought of things other than that for which he waits. Only his eyes were alive, it seemed, and they, piercingly intent, held burning visions.

When the mist enshrouding the mountain crest had dissipated, it was seen that the farmer had spoken truly. In bold relief, Bancroft stood out against the sky. Beside him was a huge post, its lower part embedded in the rock.

As all were watching, Fred Barnes, proprietor of the hotel, ran up, waving a slip of paper. At once he was the center of attention. He told of finding the note

under the door of the hotel, together with a sum of money to make possible the fulfilment of its requirements. He was to deliver supplies at regular intervals so long as they might be required, to a cave in the the side of the mountain near where Bancroft stood.

For twenty-five years, Bancroft has stayed upon the mountain. Only for half an hour at noon and at midnight does he go to his cave for food or to care for himself. No one has ever noticed him asleep, but, since he must sleep, I think it is in snatches, as he leans against the mighty post beside him. And late at night his shadowy figure has been seen to stretch and bend as he flexes all his muscles that they may not atrophy. But the greater part of his time is spent in standing motionless beside the post, gazing westward with eyes that see nothing, yet ever seem to search for the concrete image of an inner vision.

In these years, John Bancroft has become more than a legendary figure. To the region he surveys, he is symbolic of changelessness. Many people claim that he wields a mighty power through a contract with shapes of darkness. In greater degree than when he roamed the forests of the mountain, but always more obscurely, his name is linked with mysterious happenings. But time has made it clear that the bare fact of his existence forms a much more absorbing topic of conversation than any tale.

His hair and beard grew long and thick. His body became thicker-set and more solidly powerful as the years advanced. He simply donned new clothing as the old was worn away by the elements. Disregarding all but the essentials of life, he seemed to live only for the unknown purpose which binds him to his vigil. And the world, ignored, soon thought no more of Bancroft, the man; he was considered, instead, as a phenomenon.

But this afternoon something happened to bring an explanation of Bancroft. I have known awe since I first heard of him. Now I know an indefinable something—perhaps worship of a very rare kind—that binds my soul in wonder of him. I cannot think of him without feeling uplifted in mind, yet every thought of him brings me unutterable sadness, overwhelming sorrow. His life is devoted to something sublime, yet pitifully hopeless. What heights and depths of emotion he must have felt—must yet feel!

I was driving past the railway station when I saw, descending from a westbound train, a very old man with a long white beard, accompanied by one apparently his servant, also a man of ripe years. No sooner had these left the train than the bearded man gestured to his companion, who handed him a pair of field glasses. Seeking a point of vantage, the old man trained them on the crest of Mount Arden. Scarcely were the glasses focussed, however, than they were let fall from the nerveless hands of their owner, who stood swaying for a moment, then would have fallen had it not been for the supporting arms of the servant.

I hastened forward to proffer aid. The old man, his body rigidly unconscious, seemed to have suffered from shock. Placing him in my car with the servant's help, I was asked to drive him to the hotel, where rooms had been engaged. There he was made comfortable, and I busied myself with the task of bringing him back to consciousness. This proved more difficult than I had expected, but he revived in half an hour. He seemed very weak, so I had him swallow a sleeping potion, promising to return early in the evening.

On my return to the hotel, I found my patient much stronger, though still abed. He was glad to discover that I spoke German. Motioning the servant from the room, he at once leaned confidentially toward me and began talking swiftly.

"Tell me," he demanded. "Who is the man on the mountain-top? I must know."

● I told him. He shrank a little, as though with fear, yet it seemed as if I had only confirmed something he had known.

"Tell me of him. Everything you know.

Leave out nothing, however little of moment it may seem to you."

When I had finished a recital of what I knew, the old man sat silent for many minutes. Finally he whispered, "Twenty-five years. Twenty-five years! My God!" Suddenly he grasped my arm. "Tell me: Why, do you think, does he stay upon the mountain?"

I shook my head. "Perhaps he wishes to die where Alice disappeared. But I cannot explain his vitality, if that is so. It would seem that with death as his hope, he should waste away, instead of growing stronger year by year. I do not know."

"But I know, my friend. I know. For twenty years I have searched for John Bancroft. And now that I have found him, I realize that I can do nothing. It is too late—much too late. Twenty-five years! A generation of life in the world of men! What would he do if he should leave the mountain? All things would be strange to him—if, indeed, he yet retains some remnant of moral reason. No! On the mountain he must stay. I see that now. Ah, God! That I should ever have been born!"

He shook in the grip of his emotions. His pulse was rapid, uneven. I tried to calm him, but he would not heed.

"Listen!" he commanded. "I will tell you what I know, for it is not right that such a man should live unhonored by those who know him. The whole world should know of him! Ah, God!" he groaned again. "That I should have been the cause of such a thing! But I could not guess! And I—am I wholly to blame? Surely—" his voice broke with emotion.

"Twenty-five years! Listen—you are an educated man. At least you will know enough of such things to understand what I say. I will explain as much as I can, but—man knows so little! What is all man's knowledge but a warped, twisted view of a tiny section of All? How can he hope to explain happenings depending upon factors of whose very existence he can scarcely conceive? But I will try.

"Almost twenty-six years ago, it was. I, a professor in a German university, well known, respected, a learned man! What irony! Yet it was so. And when people wished to know things, they came to me, for they called me a philosopher and a man of science. Even a stranger in Germany might hear of me, if he sought information. So John Bancroft heard, and came to see me.

"Ah, how I remember that night! How often I have lain awake, recalling every detail, every word and sound and thought! Bancroft—how straight and tall and—brooding he seemed. From my first sight of him, I think I sensed how much this night would mean to me. His dark eyes, darting glances here and there as if looking—searching for something—made me wonder how they would look if they should see the object of their quest. I felt a thrill of awe, and braced myself for—I knew not what. But I felt that I must be alert.

"He told me something of himself and of the disappearance of Alice Gray. And then I listened to tales of his travels up and down and around the world, ever searching for Alice or for someone who could explain her disappearance. I think that he had never given up hope that she might have been transported to some far part of the world through some sorcery or means beyond his ken. No country exists in which he had not travelled, a tireless, somber figure . . . . In my search for him in after years mention of him was always as 'the Searcher.' It soon became my guide . . . .

"But when his story of wanderings and strange adventure was finished, he had his question to ask me: 'Can you explain the disappearance of Alice Gray?' And his eyes demanded the answer that I was reluctant to give."

A Tremendous Revelation

● The old professor paused, and his eyes were pleading. "You must understand that Bancroft and I had agreed that no human agency was responsible for Alice's—going. Since nothing is supernatural, that, too, we eliminated. There remained only the natural explanation—and that is so terrible that I shrank from revealing it

to Bancroft; I feared for his reason. Still fearing, I tried to make my explanation convince him that such an occurrence was not unusual—indeed, such seemingly inexplicable disappearances do occur, if rarely—and thus lessen the horror of it. So I made my statement as complete as I could.

"To be given serious consideration, any conception of the universe as man senses it must give some explanation, however problematical, both of the intangible, as represented by thought, and of the tangible or substantial, as our senses represent matter. For this, as well as for more practical reasons, man has postulated the existence of a universal medium, neither so fine as thought nor so gross as even the finest constituent particles of matter. This medium is termed variously the ether of space, the luminiferous—light-bearing—ether, absolute space, or the continuum. While imperceptible through our five senses or by means of instruments constructed with the intention of making it apparent, our power of reasoning has led us to accredit the ether, representing the body of the universe, with certain physical qualities, particularizing it to explain all conceivable universal processes or phenomena. To approach this ideal, the ether is claimed to be a genuine entity, filling all space without break or cavity—likely an incompressible, continuous fluid in a state of fine-grained, vortex motion; the vehicle of light and gravitation; the instrument for cohesion, chemical affinity, electric and magnetic forces of attraction and repulsion—for every kind of mechanical force.

"Many eminent scientists have denied the existence of the ether. Others have stated the necessity of a number of ethers. Learned men have spent years of their lives in theoretical contemplation of the ether as they conceived it. In such contemplation they have considered phenomena whose known occurrence is incomparable with the qualities attributed to the ether. And an instance of such an occurrence is the disappearance of Alice Gray.

"Consider the circumstances: at one moment she is visible; at the next, with only the impendence of a shadow to announce the change, she is invisible and no trace of her can be discovered. One cannot deny the existence of some state or agency bringing about this happening. And so one must take exception to the present ideal conception of the ether, at least in so far as its being perfectly continuous, without break or cavity, is concerned.

"Perhaps the first to elaborate a theory of the presence of absolute vacua, or cavities in the etheric body, was a Dr. Hern who lived in Leipsic during the last century. Certain thinkers have agreed substantially with his conclusions. Granting the ether all the qualities I have mentioned, with the exception of absolute continuity, we must visualize the cavities as 'holes' which, containing no ether, possess no etheric qualities or properties. In such a vacuum, light could not exist or manifest itself; gravitation would be unknown; no conceivable action, force, quality or thing would *naturally* exist. Even to attempt to term such a cavity a nonentity would be to give a meaning which it would not, in fact, possess. It defies analysis, or the power of thought as man exercises it.

"In so dense a plenum as the ether, how could such cavities come into being? It is impossible, in the very nature of things, to prove any theory of their origin, but I think they are formed in the very hearts of the hottest stars. In these stars, tremendous pressures prevail, and almost inconceivably powerful forces are present. These forces are so great as to lead scientists to believe that they annihilate matter, changing it into the form of radiation. In the processes of such transformation, these forces take advantage of the vortex motion of the ether, stressing its elasticity until small, individual vortices are formed. The motion of the outer boundaries of these vortices is so swift as to generate a centrifugal force great enough to fling the ether away from their 'cones.' Such vortices become vacua, varying in extent.

"After their escape from the stars, they travel through space at various speeds in the general direction of the etheric flow,

whirling so swiftly that they bear light in curves around their boundaries, making themselves indiscernible through any observation of light phenomena in space. These 'travelling holes' occasionally come close to bodies of matter. Usually their motion causes them to rebound from fixed material bodies, but sometimes particles of substance are caught up in the whirl of the vacuum and carried off into sidereal space. This, I think, is what happened to Alice Gray.

● "Standing atop the mountain, she was situated in a place favorable to the action of the vacuum as it swept along through space. Quite likely, the very edge of the vacuum caught her up, engulfing her and bearing her away. The shadow in which she seemed just before she disappeared would have been formed because of the interruption of the path of sunlight directly before her. It is scarcely to be wondered that Alice was terror-stricken. To see the sun blotted out instantly, while around her she could sense that all was as light as usual, must have shaken her severely. But she had not time to cry out before she was carried off.

"You will have realized from my explanation just why her fate is so awful. In the vacuum, neither life nor death could be, for they are processes dependent upon the action of forces of which none prevail in these cavities. She is doomed to wander through space, perhaps for all eternity, until the suns are dead worlds and the universe is nothing. Even if she should be precipitated out upon some spatial body, who can say what that body might be? She cannot live; she cannot die; she cannot think or move or exercise any of her senses. If she is cast out of the cavity, it will seem to her as though scarcely a second had passed, regardless of the aeons that may have flown. That is, unless there are laws whose existence is undreamed of in man's philosophy. Who can say?

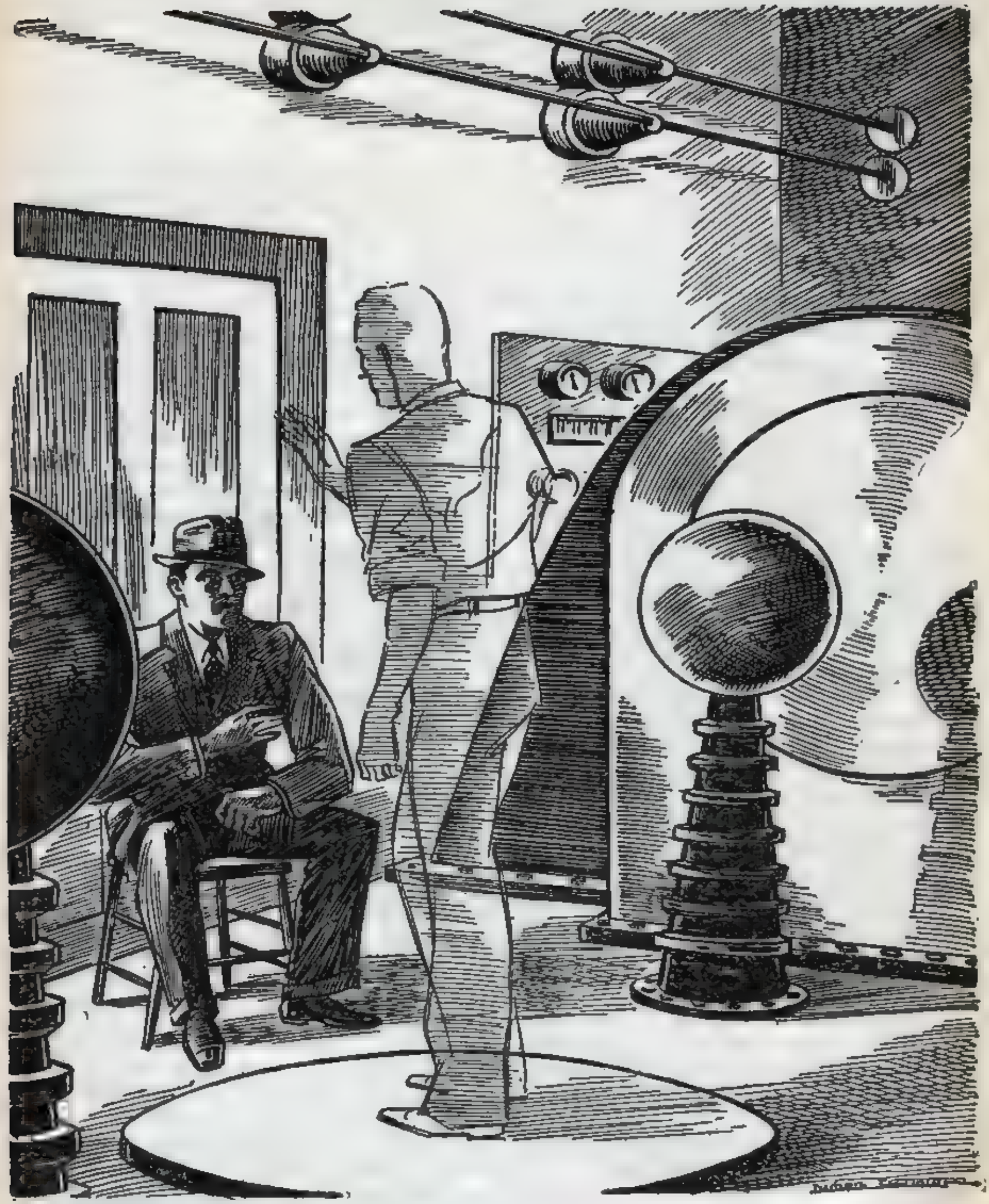
"I said nothing of these conjectures to Bancroft, saying no more after explaining how she was carried off. But he guessed my thoughts. I was unprepared for his reaction. As though, possessing the power, I had damned his soul, he glared at me in horror. Struggling to retain his senses at thought of so awful a fate having taken Alice, he finally managed to gasp, 'Will she never be carried back to earth?' Some of his horror communicated itself to me. 'Perhaps there is one chance in eternity,' I said, and attempted to explain that the vortex motion of the etheric drift might carry the hole back to earth at some era in cosmic time. But he seemed to have heard only what I said of 'one chance,' for into his face flashed a firm resolve, and he turned and ran from the room.

"I could not get him out of my mind. For over five years I fought the conviction that I would never know peace until I knew what became of him. And then I set out to search the world for him. He had not told me, and since I knew the English language only from studies in a German university, I could not guess his place of origin. People here have taken him so much for granted that no word of him has reached the outer world, and until now, I searched in vain. And now I have found him—too late."

● The old man sank back among the pillows, a faraway look in his eyes. I sat, stunned by this revelation, for many minutes. My thoughts were in chaos: a woman passing through all aeons of eternity in a split second! a man whose transcendent love . . . . At last I arose and left the hotel, for I could not bear to speak. He did not notice my departure.

The storm has come while I have thought and wondered. And Bancroft still stands upon the mountain. There he will stay, I know, hoping that the awful fate that carried her from life will yet relent and bring Alice back to the world known of men. When, and if, that time comes, and the vacuum has descended upon him, it may not suffer him to rescue her; it may demand that he share his love's timeless, eternal voyagings into the Unknown.

THE END



(Illustration by W[illegible]er)

The form of the prisoner was growing dim—misty.

THE VENGEANCE OF A SCIENTIST

By ABNER J. GELULA

● Dr. Farrington gave up his practice in a small Long Island town to take advantage of an opportunity to become the assistant of Dr. Jeremiah Logan, of New York City. It afforded him a vastly increased income to properly care for an ailing wife by sending her to the Adirondacks where the climatic conditions would aid in restoring her failing health. His baby daughter, placed in qualified hands, assured her maximum care and relieved both his wife and himself of this responsibility.

Dr. Logan had an extensive practice, but Farrington learned soon after making this new connection, that in order to hold his position, he must wink at much of his employer's activities. Infractions of the medical code apparently gave Dr. Logan little concern, for it was almost a daily occurrence that operations of a questionable character were performed.

However, Dr. Farrington had never been asked to take part in this work. It was his duty to care for patients whose ills were of a strictly legitimate nature, and this he did with a conscientious ability that soon earned him an enviable reputation. As long as it was not expected of him to take part in Dr. Logan's darker practice, he found himself happy and contented, and looking forward to the not-far-distant day when his family would again be together and he could open his own offices, in New York.

Dr. Farrington had been associated with Dr. Logan for only a year when the militant campaign to clean house was inaugurated by the State Board of Medical Examiners. Dozens of physicians throughout the state, under surveillance for months previous, were summoned to appear before the Board in defense of charges preferred against them. And among those who invoked the particular antipathy of the Board, was Dr. Jeremiah Logan—and his associate, Dr. Howard Farrington.

When these two appeared before the five men who composed the court of ethical justice, they discovered that charges had been lodged against them jointly—partners in crime, so to speak. Witnesses were produced who testified regarding the allegations made, but named Dr. Jeremiah Logan, alone, as the culprit.

There was little that Dr. Logan could say in his own behalf. His defense rested solely upon the dubious argument that any infraction of the medical code that he might have committed, was done in the interest of science and humanity. However,

● When you learn that this is a story of invisibility, you will probably say that you have read so many tales of this type that they are becoming monotonous. We agree with you that it is possible to become bored in such a situation, but we take exception in this case.

As a fictional endeavor, Mr. Gelula, who is new to our pages, has created a masterpiece. This is really five stories in one—five vivid tales, each cleverly worked out in itself, yet all blending into one entertaining and absorbing whole.

If a group of persons had completely wrecked your life—taken away everything you had to live for—made of your life an empty existence without hope for the future—you, like Farrington, would live for but one thing—retribution—revenge—and if you were a scientific genius, you would satisfy this craving by ingenious methods.

Here is one of the greatest character stories we have ever presented, and we are sure that you will be glad to read more of Mr. Gelula's work.

the Board could not see it in that light. The charges were pressed and he was sentenced to ten years in the penitentiary and his license was revoked for an indefinite period.

Dr. Logan had been one of the central targets of the campaign. Obviously, anyone so closely associated with him as was Dr. Farrington must be viewed with dark suspicion. Although no witnesses had testified to malpractice on his part, there was little doubt but that he was well aware of Dr. Logan's activities. The Board, however, was not willing to show great leniency to an assistant. It was their firm belief that an ethical practitioner would never have tolerated the felonies performed by another. So the charge against Dr. Farrington was changed from one of malpractice to conspiracy, and he was asked to enter his defense on this count.

The five doctor-judges looked upon him with cold, unsympathetic eyes when he appeared before them. It became clear, at the outset, that he could anticipate little compassion: their stern, unrelenting expressions clearly indicated that the sole hope of retaining his freedom lay only in an appeal to their hearts.

Passionately, he told them of his need for money to care for his sick wife and infant daughter; how he had tried, in a limited field, to secure the funds he required so intensely; then of the offer from Dr. Logan, unaware of his unlawful activity, and his acceptance. Fervently, he swore that his duties in the office of his employer were perfectly legitimate and upright. He pleaded, for the sake of his wife and child, to consider the situation as that of an innocent bystander who had inadvertently strayed into the field of battle.

He searched their set faces in a vain hope of catching some fleeting indication of leniency—of understanding. There they sat: the five doctors of the State Board of Medical Examiners . . . . a tribunal of justice . . . . cold . . . . severe . . . . critical . . . . Dr. Junos Morley: squat, bulbous, repugnant . . . . Dr. Elmer J. Hayden: tall, aristocratic, stiff . . . . Dr. Thomas Newell: blandly pleasant, calm, indifferent . . . . Dr. Gregory Van Alden: grey-haired, sullen, unyielding . . . . Dr. Leslie Michel, the chairman of the Board: senile, inflexible, merciless.

The End of a Brilliant Career

Through his pleadings, Farrington detected a note of formality—that his defense was being heard merely as a matter of form; that neither argument nor entreaty could minimize their predetermined conviction that he was equally as guilty as his employer. The defendant rested his case.

There was a slight stir among the doctors of the Board, a hurried whispering, a nervous readjusting of position in the high-backed chairs. Dr. Michel lifted his head slightly to better view a sheet of paper through the bi-focal lenses of his glasses. He cleared his throat and then proceeded to read the indictment against Dr. Howard Farrington.

"—and that the said Howard Farrington did willfully and knowingly conspire with the aforesaid Jeremiah Logan to engage in malpractice—"

Dr. Michel continued to read the legal document in a slow, montonous drawl . . . . it was maddening! . . . . a mimicry! . . . . Farrington dropped his head in his hands and wept . . . .

The speaker had laid aside the paper. "It is the decision of this court, therefore, that you, Howard Farrington, shall be restrained from practicing medicine in this state for an indefinite period, and shall serve three years in the state penitentiary, at hard labor!"

Howard Farrington, broken and miserable, was led away.

Farrington's ill-fortune had proved too great a shock for his ailing wife. She died within the year. And to further his misery, representatives of the orphanage where his little daughter was kept, approached him for a release of claim upon the child. They explained that a middle-aged couple desired to adopt her, and in order to pro-

vide an excellent home for the tot, this waiver of all rights had to be signed. He hesitated a moment—it seemed as if all life had conspired against his happiness, but for the sake of the child, possibly it would be better this way—he signed the paper.

A year had passed. The dull monotony of prison life had already set its indelible print upon the character of Howard Farrington. The futility of the life ahead of him, after his term would end, shattered him in spirit and in hope. The succession of crushing events; his disqualification, the prison term, the death of his wife, and then the loss of his child, slowly evolved an increasing bitterness toward law and justice centered upon an almost fanatical desire for vengeance upon the five men who were directly responsible for everything.

The sensitive, skillful fingers that had promised so much in the medical profession were now making shoes behind the walls of the prison. The rhythmic tapping of hundreds of hammers upon hundreds of shoes . . . . the maddening staccato regularity . . . . the endless routine . . . . the dragging days . . . . A single ray of hope upon the horizon of the future lessened the torture of his confinement—retribution! The desire to see the five men, who had unjustly broken his life, suffer too, had become a mania. By day he thought—by night he planned . . . . life held nothing else.

A flimsy straw of hope came one evening as he read a copy of the *American Medical Journal* that had been sent to him by a sympathetic friend. It related the weird action of an X-ray in use during an operation. A London physician reported that, while using an X-ray for the treatment of a cancer upon the arm of a patient, the entire arm had disappeared from view. When removed from the influence of the rays, it returned to visibility. No attempt was made to account for this phenomenon, nor was there any indication given of further experiments along this line. The item told only the meagre fact that such had occurred.

Farrington read and reread the article. He grasped at the hope held forth in this report. High frequency apparatus was not new to him. He had done considerable experimental work in this field during his college days. His mind evolved a plan . . . .

Plans for Revenge

● It was just a few months short of three years when Howard Farrington again stepped upon free earth. He paused outside the gate that clanged shut behind him. He lighted a cigarette, inhaled deeply, and exhaled the blue smoke defiantly. To find a job became his immediate requirement —a job that would afford the opportunity he demanded.

After days of futile search, he found his position—a position that provided the experimental facilities and time to work out his plan.

Ceaselessly he labored among generators and tubes and coils and wires; for months he toiled as if inspired, driven by a single purpose—a single hope.

Alone in the laboratory late one night, the generators whined a song of anticipation. Fifty thousand volts surged through the plates of the huge X-ray tubes. Farrington watched them in fascination. They seemed to dance in a white heat. Slowly he increased the voltage. The tubes quivered under the stress of power—then disappeared! They had vanished completely! He left the apparatus running and seized a squealing guinea pig from a nearby pen, and placed it, tied, between two round, copper electrodes, two feet in diameter, and six feet apart.

Before his eyes, the animal grew hazy, indistinct, and then vanished! He halted the generators. As if groping in the dark, Farrington sought for the rodent, finally locating it on the disk. Although he could not see it, he carefully lifted the animal and placed it in a separate cage, and waited. The guinea pig had been subjected to the rays for not more than a few seconds. He watched the cage expectantly. Only a few minutes later, the rodent slow-

ly regained its visibility, apparently little the worse for its unique experience.

Farrington was overjoyed at his success. Quietly he continued his experiments making refinements in the apparatus, until it became merely a matter of minutes for him to change over ordinary X-ray apparatus into a machine whose frequency capabilities became so great as to affect the atomic composition of material things—at a point of tremendous sensitivity—between ordinary X-rays and the super rays that could completely disrupt the atomic structure.

He made a further discovery during his experiments. He found that he could accurately determine the duration of invisibility by the length of time the material body was subjected to the rays: one minute under the ray for one hour of invisibility!

Farrington lifted his head in a fervent prayer of thankfulness . . . . He was ready.

PART I

Morley

● The day's work at the laboratory completed, Farrington bided his time at his bench until all had left the research room, and then he rapidly made his way into the high-frequency chamber. The mounting note of a generator rapidly increasing its speed continued for several minutes, then abruptly broke. The door from the room swung inward, as if of its own volition, paused, and slowly closed.

A clock on the wall indicated six-thirty. Down the flight of stairs there was a rapid shuffle of feet . . . . a door to the street opened, and closed . . . .

Twelve families lived in a small, brownstone apartment house on West 50th Street. A row of names with a button before each were on a frame in the lower hall. One modestly indicated B-6 as the residence of Dr. Junos Morley. The button depressed slowly. Faint, rhythmic thuds on the worn carpet of the stairs told of someone ascending rapidly . . . .

Dr. Morley's bulbous form dropped lazily into the well-worn leather-covered chair in a corner of his living room. He grunted contentedly as his feet sought the small stool before him. Lighting a large black cigar, he watched the voluminous blue smoke curl upward toward a single small lamp that dimly lighted the sparsely furnished room.

Dinner had been completed, and the clatter of dishes that his wife was washing in the kitchen punctuated the stillness. A buzzer sounded. His wife, drying her hands on an apron, opened the door. There was no one in the hall, so she peered down the single flight of stairs to determine if someone had rung the bell from below. But there was no one there. She shrugged her shoulders carelessly and returned to her duties in the kitchen.

"Must be those kids playing around that bell, again," Dr. Morley muttered. " . . . . Damn nuisance!"

Mrs. Morley emerged from the kitchen. "Mr. and Mrs. Clarke are coming over this evening, Junos," she said quietly. "I *do* wish you'd change that old suit and look a little more presentable."

Dr. Morley looked up, scowling. "What, guests again? What are you trying to do —see how much of my money you can spend? Entertaining is expensive! You had a couple of your friends here just a few days ago—. This extravagance must stop!" he raged. "Refreshments, lights all over the apartment, and I suppose you'll play cards for the usual twenty-five cents a corner—and lose! Say, if your allowance is too large, I can cut it down!"

His wife looked at him in disgust. She turned and left the room.

He called after her. "Do you know that the new equipment that I'm putting into the office costs more than ten thousand dollars? Where do you think it's all coming from?"

His wife returned to the living room. She eyed him defiantly. "From your own pocket," she declared hotly. "You could buy ten times as much, if you wanted to —and pay cash, too."

"Maybe I can—and maybe I can't,"

Morley replied, "but I certainly couldn't buy any if I spent the money that you spend! A dress, twelve dollars—shoes, four dollars—hat, three dollars. And every month, too! I buy a suit, and it lasts for years! Two pairs of shoes a year! One hat a year for me! It's your extravagance that will wind us up in the poorhouse!"

Howard Farrington sat in the corner of the small room. He had heard this argument before—indeed, it was almost a nightly feud between the doctor and his wife—and always regarding her extravagances.

Dr. Morley's parsimonious reputation was well earned. His ultra-thrift had become a mania. For hours he would pore over his bank-books, figuring and calculating . . . . adding dollar to dollar . . . .

A few evenings later, Farrington was again an unknown guest in the Morley household. Dr. Morley had announced to his wife that he had an important case in Toronto and was leaving the following day. He would be away for probably two weeks . . . .

Farrington listened attentively. His plan was now well formulated. There would be no further need for his visitations. Boldly, he strode toward the door, opened it and defiantly slammed it shut. Dr. Morley jumped in wide-eyed amazement.

When Dr. Junos Morley returned from his trip two weeks later, he found a mass of accumulated letters and notations upon his office desk. He rang for his secretary.

"Good morning, Dr. Morley," she greeted. Her tone bespoke a cold, emotionless efficiency, quite in keeping with the general attitude of her famous employer. "I hope you enjoyed your—"

"Never mind that," he cut in, stiffly. "What's all this on my desk! Mrs. Ware was kicking about the cost of the operation, eh? You tell her that I'm not running a charity clinic! Collect every cent she owes me . . . . Write to Dr. Billings in Philadelphia and tell him that I'm not interested in the financial condition of his patient, it's $1,000 or nothing . . . . Take a letter to Mr. William S. Carsdale; tell him that my charge is $15 a visit, and that if he can't pay my prices, it's just too bad! . . . . "

Hurriedly, he read through another letter written in a scrawled hand and on unimpressive, ruled paper. Impatiently, he turned it over to the secretary with instructions to "write her and explain that I'm tied up for the next month or so and I can't take her case." Then he added, in comment, "Why don't these people go to the clinics provided for them!"

With a curt wave of the hand, he declared, "That will be all," and he busied himself with other matters on the desk.

● The secretary stood up and started to leave the room. At the door, she paused a moment to suggest that the doctor leave several signed checks. Various bills had come due during his absence. He removed a large check book from his drawer, signed a half-dozen vouchers and handed them to her.

In the outer office, the girl placed the checks in a compartment of her desk drawer, locked it, and dropped the keys into her pocketbook. It was lunch hour. The details that the doctor requested her to attend to could wait until she returned. In a small ante-chamber, she paused a moment before a mirror to adjust her hat.

Unseen by the girl, the key-ring slowly lifted from her opened purse and lowered quietly to the carpeted floor beneath the desk.

The girl returned, picked up the purse and left the office. Swiftly, the keys were secured from their temporary resting place, and soared across the room. One was selected from the group and quietly manipulated in the key-hole of the desk drawer. It failed to fit. The others were tried in turn until one finally slipped easily into the lock. The drawer slowly drew open. The signed checks arose from the compartment and the drawer closed. Beneath a far edge of the carpet, the vouchers found a place of hiding.

Quietly the office door opened—and closed.

Late that night, Howard Farrington returned to the offices of Dr. Morley. Beneath the subdued light of a single desk-lamp, he spread the six signed checks retrieved from beneath the carpet. A hurried rummaging through the desk drawer located the physician's bank-books. There was little difficulty in determining his wealth. It was a sizable sum, he noted. Mrs. Morley had not been far wrong, he mused, when she declared that her husband could have purchased ten times the equipment!

In business-like fashion, he set the checkwriter for $32,650. He stamped each of the vouchers similarly. On each of the checks he then carefully typed the name of a recipient.

Farrington worked rapidly. His plan was clear and allowed for no loophole. He slipped one of the doctor's letterheads into the typewriter.

"Please accept the enclosed donation to your most worthy institution," he wrote. "I have long noted the fine work you are doing in your field and only the press of time has prevented my recognizing your activities in a material way before this. Inasmuch as I shall be out of the city for a few days, it will be unnecessary to acknowledge receipt of this check, except through the regular channels of the mail. Sincerely, Dr. Junos Morley, Per A. C. S."

The problem of duplicating the physician's signature on the letter was solved by the fictitious "per."

Six copies of the letter were typed off. Finally completed, a check was attached to each and sealed in a Dr. Morley envelope. Six letters dropped down the mail chute in the office hall.

Just one thing more to do: to the City News Bureau, the central clearing house of news in the metropolis, he wrote that "Dr. James Morley today divided $195,900 among six public institutions to aid in the continuance of a laudable work done on behalf of humanity. Dr. Morley declared that it was his desire to make these gifts during his lifetime rather than as bequests after death. He made no conditions as to how the money was to be used, but expressed the wish that in each case a portion of the funds be applied to the purchase of modern equipment and the reconditioning of quarters . . . .

"Dr. Morley has asked that if you desire to communicate with him in reference to this matter, you may telephone his office tonight between nine and ten o'clock. Kindly refrain from disturbing his residence or from sending reporters."

In an envelope of Dr. Morley's, he enclosed the letter, and again re-enclosed it in a larger envelope, addressing the latter to himself. This, too, dropped in the corridor chute.

As anticipated, he received the letter in the mail the following day. He placed it in his coat pocket and proceeded to the laboratory. At three o'clock, he left his bench, and removing the outer envelope from the letter addressed to the City News Bureau, mailed it at the post office.

Farrington returned to the office of Dr. Morley that evening during office hours. Quietly seating himself upon a chair in the corner, he waited until the last patient had left and Dr. Morley followed shortly after. The office was dark; only a dim light from the street-lamps made the interior obscurely visible.

It was almost an hour later when the stillness of the office was broken by the ringing of the telephone. The receiver lifted and seemed to hang in mid-air.

"Gifts" from a Miser

● "Hello," a voice answered . . . . "Yes, this is Dr. Morley . . . . The gifts? That's correct . . . . checks of $32,650 each . . . . I appreciate your calling . . . . goodbye." The receiver was replaced upon the hook of the telephone. The door opened. A laugh floated down the marble corridor. . . .

When Dr. Junos Morley at breakfast the next morning read the item on the front page of his morning paper which stated that he had donated $195,900 to six institutions, he almost suffered a stroke.

The coffee cup that he held in his hand dropped to the table. He bolted from the room and fairly flew down the single flight of stairs.

On the street he hailed a passing taxicab.

"How much to the Federal Trust Company?"

"Dollar and a quarter," the cab driver replied.

"Make it a dollar flat," Morley bargained. "But I've got to get there quick."

"Buck-and-a-quarter, buddie," the driver insisted.

"It's robbery," the doctor protested, entering the cab, "but get there as fast as you can."

At the bank, Dr. Morley hastily drew a counter check against his account for $180,000 and presented it to the teller. "Must have it immediately," he demanded, noticing the clerk's expression of astonishment. The cashier was called, and he inquired regarding the anticipated checks from the various institutions as announced in the morning papers.

"That's all right. I'll take care of that," he replied in a tone of finality. The cashier looked at the man quizzically, but O.K.'d the voucher.

One hundred and eighty one-thousand-dollar bills were tucked safely in his coat pocket. He hurried to the office where he was determined to learn more of his sudden unknown philanthropy.

An elevator door noisily clanged open and Dr. Morley stepped out, puffing and fuming, with a group of reporters at his heels.

"Go away—get out!" he stormed. "It's ridiculous. The whole story's ridiculous!" He stamped into his office waving the newspapermen aside.

Directly to his private office he headed, with his secretary close behind him. The door closed. A brief few seconds elapsed and the door again mysteriously reopened.

"Close that door!" Morley roared. The secretary rushed to fulfill the command.

"If you haven't seen the morning papers, you've seen the reporters!" he raged. The girl's usual imperturbable air of confidence slipped from her. She was visibly nervous, almost on the verge of tears.

"But for my quick thinking, I would have been ruined!" he declared hotly. "I saved myself only by being a step ahead of the person whose sense of humor is so grotesquely distorted as to do a trick like this. See?" And he withdrew from his pocket the leather wallet containing the money he had drawn from the bank. "Those are six checks that will never be paid by Dr. Morley," he laughed raucously.

"Now, tell me," he asked insinuatingly, addressing his secretary. "Just how did those checks leave your hands?"

The girl professed a complete ignorance of how the checks came to be stolen, or who it might have been that carried out this little episode.

Dr. Morley snorted. "I could get a girl for five dollars a week that would take better care of such routine duties as the proper handling of checks."

The girl did not reply.

"Tell those reporters that I'll be right out to see them. We'll discuss this later." The secretary left the office.

Morley removed the wallet of bills from his pocket, and standing upon a chair before a tall, multi-rowed bookcase, took out several dusty volumes, secreted the money behind them, and replaced the books.

Nonchalantly, he walked from the office, and now cordially greeted the reporters awaiting him. He proceeded to relate a hastily conceived story to the effect that the entire affair had been an error.

Meanwhile, as the physician attempted to justify explanation of the peculiar activities of the previous day, things were happening in his private office. A chair quietly lifted from the floor and rested before the bookcase. Several volumes from an upper shelf drew out, followed by a leather wallet. The books returned to their original position. On the desk, an unguided pen addressed a large envelope

to Howard Farrington, 382 East 73rd Street, New York City. The contents of the wallet, one hundred and eighty crisp, new one-thousand-dollar bills, slipped into the envelope. The mucilage-laden envelope flap moistened in mid-air, and sealed. A quantity of stamps were affixed, and the envelope hesitantly made its way across the room toward the door that opened from the private office directly into the hallway.

● The corridor was empty. The envelope headed rapidly for the mail-chute in the wall, lifted, and dropped from sight.

The door to Dr. Morley's reception-room, where the reporters were gathered, was slightly ajar. As if the wind had caught it, it slowly swung back. Dr. Morley was concluding his talk.

"So you see, gentlemen," he was saying, "I can only assure you that the items in today's papers were an unfortunate error. It was all a careless mistake of my secretary. She misunderstood my instructions and sent six checks through the mails to the institutions. As I have explained, I desired to *bequeath* these sums, and asked her to arrange with my attorney to make such changes in my will. The incident has placed me in a most embarrassing position, and I am sure that your papers will be glad to rectify this error."

The interview had finished. Without comment, the reporters filed from the office, Dr. Morley accompanying them into the corridor. He closed the door to the office behind him. For fully five minutes longer, he continued his conversation with the newspapermen in the hallway, and then, wreathed in smiles, he returned to his office.

Entering his private office, his attention became immediately fixed upon the chair near the bookcase. He recalled definitely that he had moved it from that position when he left. He leaped upon the chair and pulled the volumes from the upper shelf. The leather case was resting as he had placed it. He breathed a sigh of relief. Taking it out of its place of hiding, he discovered that it was empty. He almost fell from the chair in his haste to get down.

He rushed into the outer office.

"You weren't satisfied with embarrassing me—now you've stolen my money!" The startled secretary dropped her writing and stood up behind her desk.

"Dr. Morley, what are you talking about?" she demanded.

Dr. Morley eyed the girl accusingly. "The money is gone," he said with a forced calmness. "You were the only one in the room for fully five minutes while I was in the hall with the reporters!"

"I was right here at my desk all the time!" the girl insisted.

Morley paid no attention to the secretary's protestations of innocence. His eyes blazing in a demoniacal rage and his face distorted, he slowly advanced toward her. The girl paled. She seem rooted to the spot. Horror-stricken, a scream froze in her throat.

The doctor faced her. "You have ruined me—you little thief!" he whispered hoarsely. For seconds that seemed like interminable hours, he gazed at her. Convulsively, his features twitched. Then, he lunged toward the girl and savagely clutched her throat. She screamed as she vainly tore at the hands that were slowly strangling her. Merciful oblivion halted her futile struggles, and he swung her limp body across the desk.

Suddenly, powerful, unseen hands descended upon the broad shoulders of the enraged doctor, and before he had realized what had happened, his squat, heavy body was flung across the room. The girl slumped unconscious to the floor.

Several of the reporters, who had not yet left the corridor, hearing the girl's screams, rushed into the office. They halted in the doorway in amazement at the sight that met their eyes. The secretary lay upon the floor. The doctor, his clothes ruffled, sat at the opposite side of the room. He looked around him as if he were stunned.

The reporters made a rapid survey of the situation, and a cameraman among them took a quick shot of the scene.

The girl was returning to consciousness, and aided by the news-men, was lifted from the floor and into a chair. Brokenly, she related the story: of the stolen money, of the physician's accusation, and of his attack upon her.

● Dr. Junos Morley found much to interest him in the newspapers during the next few days. Pictures and type told with merciless detail the entire episode of the missing checks; the withdrawal of his funds to prevent their being honored, and his former secretary's charges of assault that had been lodged against him. In news, feature stories, and cartoon, he became the butt of editorial sarcasm, the newspapers earnestly believing that the good doctor had attempted a bold publicity stunt that had, somehow, gone beyond his control.

That evening, in his room, Farrington found a bulky envelope awaiting him. He picked it up and placed it in his pocket. He threw his hat and coat upon the bed and sat down before a typewriter. Rapidly, he wrote six letters, all identical, addressed to six charitable institutions:

"Enclosed please find thirty one-thousand-dollar bills to partly compensate for your disappointment in discovering the worthlessness of the checks mailed to you as a donation from Dr. Junos Morley in accordance with the news items of the past few days. It is hoped that cash will be found acceptable as the writer desires to remain anonymous . . . . "

PART II

Hayden and Newell

● The families of Hayden and Newell ranked high in the Blue Book of Syracuse. Both families proudly acknowledged the fact that their ancestral trees found roots in generals of the Revolutionary War and members of the First Continental Congress. They were the accepted moral bulwarks of central New York State, graciously bearing the burden of responsibility for their fellow-citizens as leaders in the Women's Christian Temperance Union, the Anti-Saloon League, the Onondaga County Welfare Society, and a great variety of other organizations of this type.

Neither Dr. Elmer J. Hayden nor Dr. Thomas Newell gave their practice much time. Financially, it was no longer necessary. Their spacious offices in the Professional Arts Building were maintained purely for the prestige that it might afford them—not for the monetary requirements. They were content to rest upon their past professional laurels. Their families were well provided for; their children were grown; and they, with their wives, found themselves well and happily occupied with their social, welfare and civic duties. If each would openly admit it, they would not deny the fact that desire for prestige alone now provided the principal initiative for existence.

These two were inseparable companions. They had found, early in their careers, common grounds and mutual understanding, professionally and socially.

● Howard Farrington, in his laboratory, mechanically stirred a concoction that boiled over the flame of a Bunsen burner as he interestedly read in "Who's Who" of the affiliations of two certain physicians in Syracuse. The book that lay opened upon his bench revealed a striking similarity between the interests and connections of Dr. Elmer J. Hayden and Dr. Thomas Newell. Both, it appeared, occupied themselves almost wholly with the responsibility of protecting the moral welfare of the citizens of central New York State, being leaders of a score of organizations and societies that were constituted as guardians of the honor, the probity, and the chastity of the upstate citizenry.

Farrington decided that it was now propitious that he should visit the homes of Doctors Hayden and Newell. He began to calculate. It was Saturday . . . . almost noon. By telephone, he learned that a train to Syracuse left at two-fifteen.

He drew a pencil from his pocket and rapidly figured a moment. From noon Saturday to 6 P. M. Sunday . . . . 30 hours . . . . 30 minutes under the ray.

Hurriedly, he removed the outer protective laboratory smock that he wore, put on his top-coat and hat, and strode nonchalantly toward the high-frequency room. Carefully, he bolted the door from the inside and set in force the secret rays. Almost three-quarters of an hour later, the door opened and silently closed again.

The clock in the arcade of the Grand Central Terminal struck two. In a far corner, Farrington spied the entrance gate for the Syracuse train. He ambled slowly past the guard who demanded tickets of the passengers going through, and seated himself in a rear coach.

It would be six hours later when he would arrive in Syracuse. Step by step, he thought over his carefully prepared plan of action as he unseeingly gazed at the countryside rushing past the window. The monotonous click-clack of the wheels on the rails and the gentle swaying motion of the car was as a soothing sedative, and more than once he was forced to stir himself vigorously when he found sleep almost overpowering him.

The restless activities of three children accompanied by a tired mother arrested his attention. More than three hours of riding had elapsed, and the wearisome lack of diversion found them wandering about the car.

One of the boys, seeing an empty seat across the aisle, determined to view the passing panorama from this point of vantage, and suiting action to thought, he jumped upon the plush cushion. It all happened so rapidly that Farrington could scarcely realize the impending possibilities as the child came toward him. If time had permitted, he might have left the seat, but such action became impossible.

Unconscious of the invisible man's presence, the tot jumped directly upon him. With a scream of terror over the uncanny situation of encountering something that moved and couldn't be seen, the boy leaped from the seat and ran panic-stricken to his mother. The other passengers in the car looked into the seat that had caused the disturbance, but could obviously see nothing. The whimpers of the lad that "there's something in that seat," brought only the pacifying assurances from all that it was "only imagination."

● Meanwhile, Farrington, probably as much frightened over the incident as was the boy, hurried to the rear of the car and prepared to step out upon the platform, if the child's complaint were taken seriously. Fortunately, however, the passengers remained in their seats, and the journey continued without further complications.

In Syracuse, he made his way to the address of Dr. Elmer J. Hayden. It was a beautiful mansion: two tall colonial columns and green shutters set against the white wood. Hidden among huge shade trees and rich bushes, it clearly bespoke the wealth and aristocracy of its tenants.

The massive lion's-head knocker on the door raised and dropped. A moment elapsed, and the formal figure of a butler appeared at the entrance. The butler looked around; there was no one there, and he closed the door.

The Hayden family were at dinner. The cold formality of the four, who were seated at the ultra-fashionable settings of the table, seemed almost stage-like to Farrington, as he quietly entered the room. Mrs. Hayden was explaining the work done at the clinic that day to her husband. Hayden Junior drew indentations of curlicues with a fork upon the linen cloth. Dorothy yawned and glanced furtively at her watch.

Farrington placed his invisible form in a heavily upholstered chair of the living room. The downy cushion, yielding to his weight, formed a concave depression in the seat. There he waited until Mrs. Hayden had completed her discourse and the group left the table.

A half-hour later, Dr. Hayden found himself alone. His children had gone out for the evening and he declined an invitation from his wife to accompany her to a concert, saying that he had a severe headache. Immediately after she had gone, he began writing a letter at his desk. Finishing the note, he addressed an envelope

and enclosed it. Unable to find a stamp at his desk, he left the room to seek one.

The letter suddenly withdrew from the envelope, unfolded, remained suspended in mid-air for a few seconds, refolded, and returned into the envelope on the desk.

Dr. Hayden re-entered the room, affixed the stamp, sealed the envelope, and with a low chuckle of satisfaction, carefully tucked it into his coat pocket. He then picked up the telephone, dialed a number, and gazed aimlessly at the ceiling as he waited.

When he got his party he spoke low, his mouth close to the phone. "Hello . . . . Dr. Newell, please . . . . Hello, Tom? This is Elmer . . . . Yes, just what I was about to tell you; everything is O.K. . . . . The reservations? Sure . . . . Hotel Victoria, room 864, a suite . . . . What a convention this is going to be! . . . . " He laughed almost boyishly . . . . "Sure, Billie and Myra will both be there . . . . I'm mailing it now . . . . Yes, the morning train, tomorrow . . . . Goodnight! . . . . "

Farrington accompanied the Doctors Hayden and Newell on "the morning train, tomorrow," as far as Grand Central Station. There he left them, the two physicians continuing to Atlantic City where the annual convention of the American Medical Association would be held. The train had been held up for almost four hours outside of Albany by a freight wreck, and when it finally arrived at Grand Central, Farrington noted by the clock that he had ten minutes more of invisibility, at best. It obviously became imperative that he immediately locate a secluded spot for the metamorphosis to take place. Accordingly, he repaired to a somewhat isolated telephone booth where a sign suddenly appeared on the inside of the glass door: "Out of Order." Several minutes later he returned to visibility. He then removed the sign and proceeded to use the telephone.

"Long distance . . . . Atlantic City . . . . Victoria Hotel." He opened the folding doors slightly to permit a change of air in the stuffy booth. "Hello . . . . Victoria . . . . This is Dr. Thompson, New York City. Can you reserve a room for me on the eighth floor? . . . . yes, it must be the eighth floor . . . . I had 862 last time I was there, is that available? . . . . Fine, please hold it for me . . . . I will be there tomorrow. Incidentally, I am expecting a package. Please see that it is delivered to my room before I arrive . . . . Just a moment, I may not be able to get to Atlantic City tomorrow—but hold that room anyway. I'll pay for the extra day, even if I don't use the room. Be sure not to allow it to be occupied tomorrow—I might or might not arrive on the late train. Thank you." Farrington smiled as he hung up.

He hurriedly made his way to a nearby store where he purchased several articles and ordered them wrapped securely and shipped to "Room 862, Victoria Hotel, Atlantic City—Dr. Howard Thompson."

The Atlantic City "Convention"

● After work, the following day, Farrington again subjected himself to the ultra-high frequency rays of invisibility and boarded an express to Atlantic City.

Arriving there, he entered the magnificent lobby of the Hotel Victoria. The desk clerk, busily admiring the charm of the telephone operator, made it a comparatively simple matter for him to extract his key, unseen, from box 862.

Farrington noticed that the key to room 864 was also in the box, indicating that the occupants—Dr. Hayden and Dr. Newell—were out. Carefully, he removed this key from the compartment and choosing the right moment, headed rapidly for the nearby stairs. Up eight flights he walked, and entered the room reserved for "Dr. Thompson." A package lay upon the table. He picked it up and placed it carelessly upon the bed.

Room 864 was just next door. He rapped sharply and awaited a response. There was none forthcoming, so he produced the key and entered. Some clothes hanging upon a closet door indicated that it was occupied. He searched through a

pocket of one of the suits; a letter addressed to Dr. Thomas Newell told that this was the right room.

A rapid survey of the quarters revealed two large French doors that opened out upon a small balcony overlooking the famous Atlantic City Boardwalk, and that this balcony was only a few yards from his own. Nothing more interested him . . . .

Farrington returned to his own room and removed the contents of the package: a camera, film, and flashlight apparatus.

Returning to the quarters of the Syracuse physicians, he headed directly for the balcony, carefully noting that the French doors could be easily opened from the outside. He placed the camera equipment in an inconspicuous corner of the small veranda. The doors were closed, and Farrington waited.

It was not long before the click of a key being fitted into the lock of the door indicated that someone was entering. The two doctors walked in and threw their hats carelessly into a nearby chair.

Dr. Hayden consulted his watch for a moment. "Eight o'clock," he announced. "They'll be here in about a half-hour."

Dr. Newell had peeled off his shirt and was preparing to wash. "Don't worry. They won't be late," he commented.

Idle chatter consumed the intervening time. At one time, Farrington's heart almost sunk within him when Hayden opened one of the doors to the balcony to breathe deeply of the ocean air. But the darkness of the night successfully shielded the camera from view.

A knock sounded upon the door, and Newell fairly leaped up from the chair to greet the expected visitors. Hayden was close upon his heels.

"Billie . . . . Myra . . . . . you're sights for sore eyes . . . . Welcome to our city." Farrington was astounded at the warm affection of their reception. Their hypocritical dignity had been easily cast aside as they enthusiastically greeted the two girls like long lost daughters. They removed their hats and coats and threw themselves into nearby chairs. Dr. Newell hastened to pour each a drink from a conveniently located bottle.

Myra drank the proffered amber-colored liquid in a single swallow. Then, crossing her legs, she nonchalantly lit a cigarette and asked, "Tell me, how are things in Syracuse?"

Billie, still clutching her glass, threw back her black wavy hair with an air of defiance, and laughed loudly as she mocked the question sarcastically, "How are things in Syracuse! You mean how are the doctors' wives in Syracuse! Boy, I can still hear the united sigh of relief from a thousand throats when we left town!"

The other three joined her laughter.

● Billie continued. "You know, Doc, I could never understand why a woman ever married a doctor if she didn't trust him. It's his business to see women all day long. And every woman—whether she may be a patient or a nurse—is a potential heartbreaker. Well, with old Frozen-Face Annie Montelle in the superintendent's chair now, the wives ought to be a little calmer."

"They're calmer, all right," Hayden remarked dryly. "I would have come out and fought more vigorously to keep you in as superintendent of the hospital, but—well, you know, I couldn't take the chance. It might have placed me in an embarrassing position."

"Well, what's the difference?" Newell interrupted as he poured another drink for himself. "You're both sitting pretty now as demonstrators for Continental Drug—thanks to Elmer."

"It's O.K." Myra assured him. "Nothing to do but be friends with doctors and build good will for the company."

"—And endorse the pay-check on the first and sixteenth," Billie said.

Hayden put his arm around Myra affectionately. "Be good to me, and it'll always be all right. I got you in as superintendent, didn't I?—"

"—And your wife got her out," Billie put in. Hayden allowed this latter remark to pass unchallenged.

"And now, I got you in right with Continental," he added.

"Oh, you're a dear," she replied.

The evening progressed. The remaining thin veneer of professional dignity gradually faded before the searing blasts of feminine charm. One of the bottles was already empty. The other was now being given full attention. Dr. Newell found his time entirely occupied by Myra; the eminent Dr. Hayden was rapidly succumbing to the alluring Billie.

Each couple had found a convenient corner on opposite sides of the room: Dr. Newell occupied a sofa; Dr. Hayden enjoyed the luxury of the deep-seated easy-chair.

Suddenly, Hayden pushed Billie from his lap, and with a sluggish effort, pulled his form from the chair. Shakily, he reeled toward the other couple, Billie clinging to his neck.

"Shay," he bellowed as he dropped into the sofa next to Myra, "Washa matter with thish party—ish too quiet!" Billie again sought comfort on the physician's lap. Newell, entwined in Myra's embrace, turned to scowl upon the intruders.

Quietly, Farrington stepped through the balcony door that had swung open, and into the room. For a second, a camera poised steadily in mid-air; a bright dish with two bulbs hung similarly in the air in the back of the camera. A bright, noiseless flash filled the room. The four were startled and Myra leaped to her feet.

"What was that?" she questioned in alarm.

Something shiny flew through the open balcony door.

"I don't know," Newell replied thickly. "but wassa dif'rence. Guess it must of been a shor'-circuit from the Boardwalk, somewhere—forget it."

The explanation apparently satisfied all, so they promptly forgot it.

In the meantime, however, Farrington had thrown the flashlight far across the Boardwalk and into the surf beyond. The film, removed from the camera and tied to a piece of string, was swung easily to the adjoining balcony. The camera followed the other equipment into the sea.

Almost defiantly, Farrington stepped through the window and into the room, opened the door and walked out.

"Close that door!" Hayden roared. Farrington obligingly did. The heavy load of liquids that each had tucked beneath his belt obviated any concern of how the door so mysteriously opened, or closed so compliantly.

In the privacy of his room, Farrington wrapped the film in a small box that he had also shipped to himself, addressed it to his home, affixed sufficient postage, and cautiously emerged into the hallway with the visible package in his hand. The corridor was clear. Down a rear exit he made his way to the dark street below and dropped the package into a mailbox. The midnight train from Atlantic City returned Howard Farrington to New York.

The noon mail the next day brought Farrington the package that he had addressed to himself from Atlantic City. To a nearby small photography shop, he hurriedly bent his steps.

"How soon can you develop this roll of film for me?" he asked.

"Four hours," the man replied crisply, and he drew a pencil from his pocket to write the order upon the form-envelope.

"I believe that only one picture came out," he explained. "But please watch it very carefully. It's a humorous picture and I want to have some fun with it among my friends. Make me about one hundred prints."

The man looked at him quizzically. "I'll have to ask for a deposit on that order. What is the name?"

"Oh, that's all right." Farrington handed the man two dollars. "The name is —William Johnston— Not later than four o'clock, please."

Shocked Society

● Farrington left his bench at the laboratory at four o'clock and went to the photographer's. The pictures were ready. He looked at one. They were clear, sharp

and well-defined—almost as good as if the subjects had actually posed before the camera. He was overjoyed at finding that this, the most arduous part of his labor, had been successful. He paid for the pictures and headed immediately for the public library where he secured the Blue Book of Syracuse. He selected a hundred names at random, noted them on a piece of paper, and then headed back to his room.

There, for the next few hours, he busied himself addressing envelopes to the élite of the upstate city . . . . one hundred envelopes . . . . and in each, he enclosed a photograph. A short ribbon of paper was attached to each picture upon which he typed: "The distinguished Syracuse physicians, Dr. Elmer J. Hayden and Dr. Thomas Newell, attending the medical convention in Atlantic City. The two young ladies are former superintendents of Syracuse hospitals, affectionately known as Billie and Myra."

A few less than one hundred envelopes were posted that evening—all carefully addressed with a "personal" to the leading families of Syracuse—the leading families with the exception of the Haydens and the Newells. The remainder were mailed to each of the newspapers in Syracuse and to the major news-picture syndicates in New York City. A note was attached to each photograph, giving the names of the subjects and adding that it might be advisable for the editor to keep the photograph on file for convenient reference because "it will be found valuable in the near future."

If a bomb had burst in the midst of the Syracuse social colony, there could have been no greater furor than that which resulted from the receipt of the morning mail in the homes of almost one hundred families. A scandal of the first magnitude was in the making. A few scoffed and thought it a good joke, but the vast majority recognized the fact that such a photograph was hardly a laughing matter—especially when the feminine angle of the picture was considered. Obviously, each family thought that they were the sole recipients of the snapshot, and it was with malignant caution that Mrs. Carlton telephoned Mrs. Teasdale to appraise her of the disgraceful missive received through the mail but "Neither Mrs. Hayden nor Mrs. Newell must ever hear of it!" But Mrs. Teasdale had received the picture also! And so had Mrs. Williams . . . . and Mrs. Davis . . . . and Mrs. Van Cortlandt . . . . and Mrs. deLong . . . . and innumerable others.

The tension of an imminent social explosion clutched the upstate smart set. The telephone wires burned with an over-the-back-fence discussion of the impending scandal . . . . "Imagine it, Dr. Hayden . . . . of all people, Dr. Newell . . . . wait till Mrs. Hayden hears . . . . oh, no, she must not be told . . . . oh, no . . . . Mrs. Newell will divorce him . . . . well, she should . . . . and those two girls . . . . disgusting! . . . . terrible! . . . . awful! . . . . my dear. . . ."

But, somehow, Mrs. Hayden and Mrs. Newell *did hear* . . . . and saw the picture . . . . and learned that every family of any consequence in Syracuse had received it . . . .

There was but one thing to do . . . . and both Mrs. Hayden and Mrs. Newell did it . . . . they visited their attorneys. Suits for divorce were filed . . . . the intentions became a matter of record . . . . and the newspapers then printed the picture that made the case! Billie and Myra were named as co-respondents . . . . it was in the picture . . . . it was in the papers . . . . and the tabloids gave it page one!

PART III

Von Alden

● Dr. Gregory Van Alden was recognized as the foremost alienist in the state of New York—if not the United States. His testimony regarding the mental abilities, or disabilities, of an individual was accepted as absolute and final in any court in the country. Victory became a foregone conclusion for the fortunate plaintiff or defendant who received the benefit of his expert testimony. His judgment was impeccable. Indeed, for any master of mental

qualities to dispute the findings of Dr. Van Alden bordered upon the ridiculous —as if a school-child might question the accuracy of a professor!

And, if Dr. Gregory Van Alden had been of any lesser rank, Howard Farrington might have been hard pressed to determine a means of vengeance that would have satisfied his sardonic, ironical sense of humor. As it was, he could only await the incident he sought—chance must again lend a helping hand—and he would do the rest.

Dr. Van Alden spent two hours every evening in his office on West 57th Street, in New York City, to see patients who came to him from every walk of life, and from every state in the Union, for examination or consultation. His manner to all was sharp and cold. The years had soured his disposition; his thin lips, sharp nose and closely-set eyes seemed to bespeak a certain inhuman quality. But he made no pretense at being kindly, nor made any effort to build professional goodwill. He was the famous Dr. Gregory Van Alden —a psychiatrist, not a missionary. There was nothing altruistic about him. A knowledge of the processes of the mind was his stock-in-trade—and it was for sale, only.

But not always was he entirely mercenary about his professional activities. He was sufficiently astute to realize that, despite his store of learning, if the newspapers did not give him attention every so often, he might still be an insignificant, unheard-of practicing physician. It was, therefore, when Dr. Van Alden noticed a legal battle in the offing where testimony concerning the mentality of an individual was likely to become of paramount importance, that an emissary was certain to contact one of the opposing attorneys and suggest that an expert alienist—such as Dr. Van Alden, for instance,—might be of inestimable value.

His tall, erect stature; his keen, steel-grey eyes, and the aristocratic touch of white in his hair, gave him an air of natural dignity that caused the more timid of his patients to almost cower in his austere presence. He looked eminent and played his part well. He handled his practice like a merchant does his wares. Professional ethics forbade direct advertising, but his two secretaries were capable publicity men who more than earned their handsome salaries by the quantity of notice they secured for their employer. They were particularly adept at securing "invitations" for him to speak at important gatherings, and reporters were always certain that his words would provide "good copy." As a member of the New York State Board of Medical Examiners, the prestige this afforded him was invaluable, and his standing in medical circles was high and mighty. In fairness to Dr. Van Alden, it must be confessed that he was, beyond doubt, a most capable specialist. But he was interested solely in Dr. Gregory Van Alden—without qualms as to the underlying niceties of how this reputation was maintained—just so long as it *was* maintained.

● Howard Farrington learned much about Van Alden and his professional activities. Each evening, for two hours, the invisible Farrington sat in the inner sanctum of the noted alienist; listening to the laments of each patient; watching each examination, heeding each word of conversation . . . . hoping that even the great Dr. Van Alden was not entirely beyond reproach!

Several weeks had passed in this manner. The doctor's every activity, thus far, had been strictly ethical. There had been no transaction to offer the slightest evidence upon which to base any suspicion of irregularity.

One evening, however, two men were ushered into the spacious offices of the alienist. They were well-dressed, of medium build, and appeared to be radically different from the average type of person who visited the doctor professionally. An air of importance seemed to surround the visitors. One, carrying a cane, leaned upon it nonchalantly as he gazed upon the array of exhibit-pictures on the office walls. The other selected a nearby comfortable chair,

and taking a cigar from his pocket, placed it, unlighted, in his mouth.

It was Van Alden's habit to be busily engaged at his desk when a patient entered the office. It lent importance and cultivated a more profound respect. He had discovered that it was good business to keep the individual waiting a minute or two.

Dr. Van Alden put his pen aside and looked up from his desk.

"Yes, gentlemen?"

The man with the cane approached the desk and proffered a card. "I am Charles Drake, attorney-at-law. This is Mr. Raymond McMillan, my client. There is a matter of the gravest importance that, on behalf of my client, I desire to discuss with you. This is, of course, a professional visit, and your bill will be honored accordingly."

Dr. Van Alden maintained a remarkable outward calm. He seemed not in the slightest curious regarding the peculiarity of the visitation. He bade the man be seated, and then leaned back in his swivel-chair, stroking his chin meditatively, as he listened.

"No doubt, doctor, you have come across cases similar to that which I shall describe," he began slowly. "Mr. McMillan, here, is the nearest-of-kin to William McMillan, his uncle. Mr. McMillan, the elder, is well known because of his wealth and eccentric miserliness. Obviously, a man has a perfect right to be as parsimonious or as philanthropic as he desires. But Mr. McMillan is now past seventy years of age, and his recent financial activities have caused my client to fear that his uncle is mentally deranged.

"After a lifetime of niggardliness, he has suddenly become super-generous. Although he has millions, at the rate he is making distributions, even his seemingly limitless supply will come to an end. Efforts to reason with the man cause him to fly into a tantrum. He has declared that he is bent upon making an entire distribution of his wealth before he dies. He is giving no thought to his nephew who has cared for him ever since early youth. Something must be done to restrain him—to preserve at least a part of the vast fortune that the old man is now trying to dispose of. There is little doubt that age has caused a weakening of his faculties. We are determined to go to court to halt this flagrant extravagance . . . . . "

Dr. Van Alden studied the two men. "Yes," he said after a moment's pause, "It is quite possible that age might create such a condition—and then, again, he might be perfectly sane. If I might be permitted to quote your own words, 'obviously, a man has a perfect right to be as parsimonious or as philanthropic as he desires.' I must examine the subject in order to determine his mental condition."

"Absolutely—of course!" the attorney hastened to assure him. "An examination, by all means. But you realize, doctor, that your decision might demand repetition upon the witness stand if you should find the old man unfit to handle his own resources."

Van Alden toyed with a pencil that he lifted from the desk. "I am ready to testify, if necessary, to any condition that I may find. Of course, you realize that my time is valuable and I must be compensated accordingly."

The lawyer smiled. "Most assuredly, doctor. If it becomes necessary for you to testify to his incompetency, would a $50,000 fee be sufficient?"

Dr. Van Alden evaded a direct reply. "Please call me when you desire the examination to take place," he said simply.

● The doctor shook hands with his two visitors, and they left the office. Farrington followed them out.

He ambled away from the physician's offices after watching the two men enter a waiting limousine. A few words to the chauffeur, and the car sped away toward Fifth Avenue.

To Farrington, who sat on the side-lines while the conversation had taken place within the offices of the renowned psychiatrist, the unspoken mutual understanding between the visitors and the physician became readily apparent.

"So this is the man who demanded that

the high professional standing of the doctor be maintained!" he muttered, bitterly. He paced the streets for hours, thinking of the plan that began to assemble in his mind. It was perfectly clear just what part each of the parties concerned would play .... their intentions could not have been more evident if words had supplanted the hypocritical innuendoes that passed in the conversation.

Only a court of law could set aside the right of William McMillan, the alleged eccentric millionaire, to dispense his money as he saw fit. And only in a court of law, would the testimony of the eminent Dr. Gregory Van Alden be of any consequence. It was, therefore, only logical for Farrington to foresee that when the nephew decided to legally force the old man to halt his sudden beneficent extravagances, the newspapers would pounce upon the story as excellent material. Further, he recognized the fact that the attorney used keen judgment in seeking the services of Dr. Van Alden. There was little likelihood that any court would believe that so important a personage would lend himself to a plan so nefarious; that if Dr. Van Alden declared the man to be incapable of handling his own financial affairs, it would become merely a matter of legal form for the court to name a trustee who would control the expenditures of the old man. Also, he clearly saw how helpless the elder McMillan would be in his wrath against his nephew. There was little doubt that the latter anticipated becoming a major beneficiary by the terms of the man's will when he died, and any attempt that he might make to change the will, cutting off the nephew, after he had been adjudged incapable, would not be upheld by law.

Farrington watched the newspapers closely for an announcement of the start of the case. But he did not have to look closely after the case was filed, for, as he had anticipated, the newspapers seized upon the material and played it up as big news. The court would hear the case at a date set one week away. Farrington carefully studied the reported claims of the plaintiff and the stringent denials of the defense, and then set about to complete his plan for vengeance upon the fourth doctor who sat upon the Board of the State Medical Examiners.

The Voice

● It was on the evening following the first news of the impending legal battle that Farrington, invisible, approached the offices of Dr. Van Alden. He awaited the arrival of a patient, and followed him in through the opened door. It was past nine-thirty before the last patient had left the office of the physician, and Van Alden sat alone in his inner sanctum. Farrington had slipped in when the last patient had left.

Van Alden was bent over his desk, reading a newspaper account of the forthcoming McMillan trial. Farrington walked noiselessly across the heavily carpeted floor, toward the doctor.

"You cheat!"

Van Alden, startled, jumped up from his chair. He looked around the room to determine the source of the voice he imagined he heard. The words were clear and distinct and seemingly quite close to him, yet there was no one in the room.

He stood quietly for a moment as if awaiting a possible repetition of the voice, but nothing more was heard, and he again seated himself behind his desk.

"You thief!"

Van Alden again leaped from his seat. A glint of terror replaced the cold, emotionless stare, as his eyes again swept the room. "Who is there?" he demanded.

The doctor waited in vain for a reply. He shrugged his shoulders and ran his fingers through his straight, iron-gray hair. He sank slowly into the chair. "Nerves .... getting jumpy," he murmured. Absently, he picked up the paper that he was reading, and slipped it into the drawer. He was sure he heard a voice. It was so clear .... "cheat .... thief" .... He dug into a lower drawer, withdrew a bottle, and poured a drink. He studied it for a moment and then nervously gulped it down.

"Hypocrite!"

Van Alden wheeled. The liquor bottle, brushed from the desk, crashed to the floor. The voice seemed right beside him. There was no mistaking it . . . . it was no play of the imagination . . . . it was a voice—clear and definitely spoken.

"Who is there?" he repeated. His voice took on a tone of defiance. He looked around the room as if anticipating that someone would emerge to leap upon him. He hesitantly brushed aside the long velvet portières that covered the windows. He looked behind the leather couch and the large leather chair. But no one appeared, and no one replied to his commands.

Dr. Van Alden was not easily shaken. He believed neither in the supernatural nor the occult. And, as a student of the mind, he felt certain that he was not becoming subject to hallucinations. Yet, there was the voice . . . . clear and distinct . . . . there was no doubt but that he had heard, and he reasoned, behind every word is a spokesman. But where and who was the speaker?—that was the question!

Several minutes had elapsed. The voice had remained silent. Finally, picking up his hat and cane, he strode from the office with a mock-boldness. A moment later, the office door again opened and closed. He might have mentioned the experience to someone, but they would have believed him affected. No, that would never do . . . . it would hardly be advisable for the noted Dr. Gregory Van Alden, a specialist in quirks of the mentality, to himself be a subject of such a condition. "Hearing things!"—ridiculous!

He jumped into his car that was parked in front of his office. But even as he drove, his thoughts dwelt upon the voice. He had intended to go to the club that evening, but possibly, he felt, it might be better to stay home . . . . get a full night's rest for a change . . . . he had been working hard . . . . nerves getting jumpy . . . .

He arrived at his apartment, occupied solely by himself and a valet-butler for companionship. The butler greeted him at the door, and then left him alone in the living room. Van Alden walked over to the table and aimlessly picked up a book, retreating to a comfortable chair in a corner of the room.

He skimmed through the pages with casual interest. He put the book down and picked up a nearby magazine. He appeared nervous . . . . irritable . . . . agitated. A story arrested his attention and he proceeded to read.

But he read for only a few minutes.

"You know he's not insane!" . . . . The voice again made itself known. It sounded hollow and emotionless.

● This was becoming serious. Even in the privacy of his home, the voice pursued him! Whatever it was, or whoever it was that spoke to him must be dealt with differently, Van Alden decided. Gathering up every ounce of courage, he met the statement behind a brave front.

"Who is not insane?" the doctor ventured. There was no reply. The alienist waited. His own words seemed to re-echo in his ears. His own words seemed to mock him. He was talking to himself!

He drew a handkerchief from his pocket and wiped the beads of perspiration from his brow. Hesitantly, he again seated himself, and with a forced interest, returned to the magazine.

"He's sane! . . . . " It was the voice again! Van Alden leaped to his feet and stared into the blank wall opposite from where the voice had seemed to emanate. There was a pause of several seconds, and the voice continued:

"McMillan will haunt you until the end of your days! You signed the affidavit that he was incapable of handling his own financial affairs!—You know it's a trick and you hide behind the cloak of professional ethics to ease the way for you to participate in the money . . . . stolen money . . . . You crook!"

Van Alden listened aghast. The fear of *what* it was that spoke to him became secondary in importance to *who*

it was. The whole eerie affair was maddening! He trembled beneath the onslaught of such brazen truths. His demeanor changed.

"Come now," he begged. "Who are you —who is it that speaks?"

There was silence for the next few seconds. Then the voice resumed. "I will torment you forever unless you swear that William McMillan is sane—as you know he is—more sane than you are! And more capable than either his nephew or his attorney, who are trying to steal his money from him. Expose them! Be the man you pretend to be!"

Then, suddenly, from an opposite side of the room, the voice spoke again. Its tone was deeper. The words came more slowly. "Don't be a fool, Van Alden. You'll hear no more voices after the week is over! And you'll be at least $50,000 richer. Hold on to yourself, man! Fifty thousand dollars! It's a fee . . . . a perfectly justifiable fee . . . . You are a man of ability and your services must be paid for accordingly. If you go back on your affidavit now, you're bound to involve yourself! In your judgment, McMillan is incapable of handling his own affairs. It's your judgment! Opinions may differ, but it's your judgment—and your reputation for judgment is excellent. Don't back away now, Dr. Van Alden!"

The alienist gazed terror-stricken at the blank wall from where the second voice seemed to emanate. "Go away! Go away!" he fairly screamed. The butler came running into the room.

Van Alden looked at him with a sigh of relief. To have someone else in the room—a material someone else—was comforting. "No, James, thank you. Just a—a bad dream."

The Victory of the Voice

● Howard Farrington walked toward the subway chuckling to himself. He almost enjoyed the game he was playing. Acting the rather fantastic double rôle of conscience was increasingly amusing. And, he reflected, the doctor's professional stoicism was not nearly so thick as anticipated.

Until the day of the trial, Farrington dogged the very footsteps of Dr. Gregory Van Alden. Every opportunity that presented itself, he flung epithets of denunciation and counsel upon him. Each morning he gained entrance to Dr. Van Alden's residence to torment the physician upon his awakening. And every night, he made his way into the office, awaiting the brief interval between the egress of one patient and the entrance of another to reiterate a cutting word or two that effectively maintained the alienist's mind on the part he played in the forthcoming McMillan case.

And in his home, each night, he made himself an unwelcomed guest. If it was at the club that the doctor sought refuge from the voice, he sought in vain, for the voice followed and whispered insinuations. By day and by night, the voice trailed him until he was driven almost to a point of distraction by its incessant demands and remonstrations.

The newspapers centered all attention upon the unusual case on the day of the hearing. Big names were involved, plus the vast holdings of the McMillans and the questionable efforts of the plaintiff. But the famous Dr. Gregory Van Alden would testify—he was beyond reproach —and his testimony would do much in affecting the judgment of the court.

The courtroom was crowded on that eventful day. The elder McMillan had sufficient good judgment to surround himself with an imposing array of legal talent prepared to do battle against the onslaught of his impetuous young nephew. And equally prepared was Raymond McMillan, whose attorneys saw all to gain and nothing to lose by the impending conflict. He was gambling on a basis of all or nothing, for at the rate that his uncle had been dispensing his wealth, there would be only a comparatively small portion of the original estate left for him after his death. The attorneys had assured him that this reckless squandering of money could be legally halted, and if

he succeeded, it would not affect his standing in the old man's will.

There was much questioning by both sides, but Dr. Van Alden listened with only a feigned interest. His eyes furtively swept the crowded room as if conscious of a thousand accusing eyes focused upon him. He sat quietly upon the bench provided for witnesses, nervously toying with his fingers.

Somehow, the voice had not made itself known this morning, and the fear of its imminent intrusion kept him completely distracted. The judge had called a fifteen-minute recess. Dr. Van Alden would be the next to take the stand.

The judge courteously invited the physician into his chambers. He eagerly accepted. The fear of being left alone to further possible torment from the voice gripped him. The judge spoke briefly of various topics, and the physician replied in disinterested monosyllables. The justice eyed him quizzically. The man was acting most peculiarly.

"Are you ill, doctor?" the jurist questioned.

"Oh, no—well, I am a bit under the weather, to tell the truth," he replied hesitantly.

"I'll get you some water," the judge offered.

"Please don't trouble—" but the jurist had already left the room.

Van Alden was alone. Terror crept upon him. He sensed an ominous presence in the room. He looked at the door—ready to dash out if the voice should again be heard.

"Tell them—it's your last chance!"

Van Alden leaped to his feet and clapped his hands over his ears. That voice! It was driving him insane! . . . . The judge returned to the room carrying a glass of water. Van Alden was trembling. He grabbed the glass and drained it.

He dropped into a chair. "I'll postpone the case, if you feel that you cannot testify," the judge offered.

"No, no, I'm all right now," the physician assured him.

● Court was brought to order. The celebrated Dr. Gregory Van Alden was called to the stand. A buzz of hushed whispers swept the courtroom as the physician arose wearily and mounted the two small steps to the witness chair. The air of dignified arrogance that had always marked the man had disappeared. Those who knew the man remarked of the definite change that had come over him. His determined manner—his portly mien—his cold aloofness had disappeared. Hesitantly, almost falteringly, the physician made his way to the stand.

Aimlessly, his eyes swept the sea of faces that jammed the courtroom. The attorney for the plaintiff loomed before him. There was a hush of anticipation—then the booming voice of the lawyer:

"What is your name?"

"Dr. Gregory Van Alden."

"In what branch of the medical profession do you specialize, doctor?"

"I am a diagnostician of mental ailments."

"You have examined the defendant, Mr. William McMillan?"

"Yes—yes, I have examined the defendant."

"And what is your finding concerning his mental condition?"

Van Alden hesitated. His lower lip quivered. His eyes stared glassily through the huge body of the attorney before him. Suddenly he drew himself up. His old air of resolute determination again possessed him. It was the noted Gregory Van Alden who spoke! The voice . . . . nonsense! . . . .

"My examination revealed the defense to be incapable of properly managing his own affairs!" he replied steadily.

A wave of noisy comment from the audience flooded the courtroom. The judge rapped sharply for order. Van Alden drew a handkerchief from his pocket and mopped the perspiration from his brow.

"You'll regret this! . . . . "

The alienist, startled, turned to face the voice that whispered hoarsely in his ear. No one else could have heard it above

the commotion of the unsettled spectators. Van Alden didn't expect to see anyone when he turned; it was a normal reaction. His mouth twitched.

He again faced the courtroom. He wanted to scream—to rave—to rant—to do anything that might free him from the torturing torment of the voice . . . .

The court was again quiet. The attorney for the defense stood before him. The momentary wave of courage that gripped Van Alden previously, had passed. The tirade from the voice . . . . hearing in actual words what he knew to be true . . . . the constant repetition of his part in the plot . . . . if he could only shut out that voice . . . . it was maddening! . . . .

"Dr. Van Alden," the attorney began, in a tone pregnant with an insinuating knowledge of the situation, "can you say, upon your sworn oath, and knowing definitely that your testimony may wrest from this man his inalienable right to control his affairs as he alone sees fit, that he is incapable of doing so? Do you tell the court that merely because the defendant desires to dispense his wealth in a philanthropic manner, while he is yet alive, despite the objections of his nephew, that he is mentally deficient?"

There was a pause. All eyes centered upon the witness. A nervous clearing of throats ran through the audience. Van Alden looked at the attorney for a moment and then at the faces of the nephew and his attorney. They smiled at him. It was they who had dragged him into this nefarious case . . . .

His eyes blazed insanely. He clamped his jaws, savagely. He breathed rapidly . . . .

"Tell them! . . . . " The voice again! It was too much! His head reeled . . . . a mass of faces crowded upon his vision . . . .

He jumped from his seat, sending the witness chair crashing to the floor. "Yes . . . . I'll tell them! I'll tell them!" he screamed. "There they are," and he pointed to the nephew and his aide. "They wanted to steal the old man's money by proclaiming him insane! And I lent myself to the deed! . . . . Yes, I'll tell you —I was to receive $50,000 for my part in the scheme— Of course he's sane. But it seemed so simple—so easy—until the voice came . . . . the voice . . . . the voice! . . . . "

He leaped from the stand and flung himself upon the two men he accused. He laughed insanely as he clawed at the pair. Court guards finally broke his hold upon them. A raving maniac, he turned upon the attendants in wild rage for having thus interfered with his insane sense of gaining vengeance. After a battle of several minutes, the guards succeeded in pinning to the floor—Dr. Gregory Van Alden.

PART IV

Michel

● Dr. Leslie Michel's avocation was politics. In fact, he might have wholly abandoned his professional practice in favor of a political career, had he believed that personal ambitions could better be gratified in this manner. But he discovered early in life that the party's waiting list of candidates was already overgrowded with names of the politically sacrificious and that his chances of ever reaching a place of importance through regular channels were exceedingly slim. He therefore decided upon the next best move: to select the most promising candidate who was already well advanced, and lend his full support to him. Thus, he reasoned, when the political tree bore fruit, a choice plum must surely fall to him.

He found little difficulty in receiving a ready acceptance of his name in connection with the candidacy of Martin Johnston, who was renominated for the State Senate. The prestige of Dr. Michel was not to be passed over lightly. He was recognized as being the nation's most skillful surgeon, and as president of the American Medical Association, his efforts in behalf of the candidate brought whole-hearted appreciation.

So when Johnston was elected and had become majority leader in the Senate, the recommendation to the Governor that Dr.

Leslie Michel be named as Chairman of the State Board of Medical Examiners was promptly acted upon. It was a coveted position and provided a logical stepping-stone to higher possibilities.

Dr. Michel was not long in his new position before he indicated that his political judgment was not in keeping with his professional ability. Almost immediately, he launched a sweeping state-wide campaign against violators of the medical code.

The campaign was short, bitter and sensational. Almost every physician in the state found himself under suspicion. Petty professional jealousies and public distrust of certain physicians brought a barrage of communications, mostly anonymous, to the board, charging flagrant violations of various medical acts. The newspapers found sensational, circulation-building material in the campaign, and some editors facetiously listed the names of disqualified physicians, each day, like a war casualty list. But, like a storm, it quickly subsided, leaving a mass of wreckage.

Politically, the "higher-ups" did not look with favor upon the radical activities of the new Chairman of the Board. It was not good politics to stir up a hornets' nest as long as the hornets were quiet and caused no general concern. But Dr. Michel was more of an idealist than a politician, and he proceeded with his reforms despite urgings that he desist. Thousands of letters received by the Board expressed both praise and condemnation of its activities—but between the lines of almost every communication, a tiny ax that had been ground by the campaign could be discerned.

Three years had passed. Senator Martin Johnston was being groomed for the chair of Governor. Obviously, Dr. Leslie Michel became one of his most staunch supporters, and Johnston assured him that, if he were elected, his loyalty would be rewarded with the position of Director of the State Department of Health. This fact became common knowledge, with the result that there was little external battling for this post. This, one of the choicest of the political plums, was conceded to belong to him.

Martin Johnston was elected Governor and the prizes to the tried-and-true were dispensed. But, politics being an unexplainable science, it neglected to properly deal with Dr. Leslie Michel, and the coveted post of Director of Health went to another faithful.

Dr. Michel stormed, but to no avail. The names had already been announced and he had been left out in the cold. Accepting no compromises, and disgusted, he washed his hands of political interests and returned to give his entire energies to the field in which he had earned his reputation. His close friendship with Governor Johnston had turned to a bitter hatred, and impetuously and indiscreetly he openly vowed that if an opportunity should ever present itself whereby he might give proper retribution for the manner in which he had been treated, he would take full advantage of it! Candidly, the fact that Dr. Michel was not appointed as scheduled was as much a surprise to the newspapers and to the politically-minded of the public as to Dr. Michel himself.

It was a few months later that Dr. Michel and Governor Johnston were to again come together. A delicate emergency operation upon the brain of the state executive became imminently necessary, and to practically assure the success of the operation, none other than the famous surgeon might handle the knife. When told that his services would be demanded upon the following day to operate upon the Governor, Dr. Michel demurred.

"There are other surgeons equally as capable of successfully performing this operation as I," he declared. "I have little regard for Governor Johnston and therefore do not wish to be of service to him."

Continued appeal failed to move him. He remained adamant in his conviction that he was under no obligation to the Chief Executive and he staunchly refused to operate. The case was hurriedly laid before the Medical Board with the result that he was commanded to attend the

Governor. Recognizing that no other course was left open to him, he reluctantly yielded and promised to be on hand at the city hospital in Albany on the following day.

● Of all who read the account of Dr. Michel's refusal to operate and then of his surrender to the demands of the State Board, Howard Farrington, doubtless, found the greatest interest. The course of years had in no way toned the bitterness he felt toward the famous surgeon. It was he, more than all the other members of the Board combined, who could be held responsible for the wrecking of his life. He had waited long for this opportunity—a day when the eyes of all the nation would be focused upon the famous Dr. Leslie Michel. True, it was nothing out of the ordinary for the noted surgeon to operate upon the great or near-great, but Farrington had bided his time. Until the services of Dr. Michel were demanded in a case that centered all attentions upon it, he had waited.

Farrington, invisible, let himself into the main operating room of the Albany Hospital early on the morning of the scheduled operation. It was a bleak November day and he immediately removed his overcoat, carefully depositing it in a far corner of the room. He then proceeded to wait for the appearance of the doctors. Something, however, caused the operation to be delayed for a few hours. It was not until mid-afternoon at a moment when Farrington was thinking of departing, that the appearance of the assisting physicians indicated the operation would now be performed. This delay seriously worried Farrington, for he had not subjected himself to so great a treatment of the rays that he could feel safe beyond a half hour or so additional. He had given himself this minimum exposure to the rays for he had begun to find that his heart action was being violently affected by them. He decided, however, to take his chance now and to stay.

The most prominent medical men of the state gathered in the gallery of the finely equipped operating room. Dr. Michel's feelings toward the Governor were common knowledge. Interest in the case ran high. Three doctors, besides Dr. Michel, who had not yet entered, were on the floor: they were accredited assistants. There were also two nurses and the anæsthetist. Just outside the door of the room stood two Secret Service men—the Governor's bodyguard.

Clad in a spotlessly white gown, sleeves rolled well up, a tight skull-cap and a strip of gauze across his nose and mouth, Dr. Leslie Michel strode in, the cynosure of all eyes. Seemingly oblivious to all around him, he headed straight for the instrument table. A tense silence filled the room. Save for the subdued rattle of instruments and the stealthy movements of the nurses, not a sound could be heard. All eyes were concentrated upon the emotionless composure of the operating physician.

Governor Johnston was wheeled in as Dr. Michel washed his hands in a disinfectant. The executive called him by name. The surgeon walked over to the operating table.

"I would have no one but you, Dr. Michel," the Governor said slowly. "My life is in your hands and regardless of how the operation may result, please be assured that I am confident you will give the best that is in you." The official extended his hand.

The surgeon looked at him through narrowed eyes. He grunted, sarcastically. "We need not become sentimental, Governor," he replied, crisply. "You are my patient and my personal feelings in the matter are of no consequence. I am operating professionally—not socially."

A hushed whisper swept through the gallery as the words came clearly to the audience. Dr. Michel turned abruptly away, motioning to the anæsthetist to begin. It was a matter of scarcely a minute before a nod from the attending physician indicated that the operation might now proceed.

The unconscious form of Governor Johnston on the operating table stood out in bold relief beneath the dazzlingly bright overhead dome-lamps. However, many of the visiting physicians in the gallery had nevertheless equipped themselves with binoculars to better witness the activity of the famous surgeon's deft fingers, while those who were merely generally interested in the case found the proximity of the gallery to the operating table sufficient to watch the proceedings in awed concern.

"Who Pushed My Arm!—"

● A hundred eyes centered their attentions upon the eminent doctor as he began the operation. He worked quietly, swiftly and effectively . . . . utterly insensible to the tense concentration of the audience around him . . . . utterly indifferent to the fact that the brain upon which he worked so blandly, reposed within the cranium of the Governor of the State of New York.

Ordinarily, an operation of so delicate a nature gave the patient but half a chance of recovery—or, indeed, of ever returning to consciousness. But Dr. Michel was no ordinary surgeon. His skill was consummate. The confidence with which he set about his task seemed to relieve the tense anxiety that gripped the spectators, and wise nods of approval indicated their faith in his ability and their admiration for him.

Swiftly, his nimble fingers guided the course of the keen-bladed knife . . . . deeper . . . . through the skin . . . . deeper . . . . into the bone . . . . deeper . . . . through the skull . . . . Mechanically he put the knife down and reached for another instrument . . . . a tiny, long-handled razor-edged instrument. Carefully, bending over the patient, he delicately cut the interior tissue . . . . slowly . . . . cautiously . . . . a hair's breath from the brain . . . .

Suddenly, with a startled cry of horror from the spectators, the knife plunged hilt-deep into the skull of the patient! Aghast, Dr. Michel wheeled.

"Who pushed my arm!" he screamed. "Who pushed my arm!"

There was no one near him. His three immediate assistants and the two nurses stood transfixed with terror by the action that took place before their eyes. The gallery rose as if by single accord. The Secret Service men rushed through the door. All eyes were fixed on Dr. Michel. A dread silence filled the room. The surgeon looked slowly into the faces that bent down upon him from the balcony. They were set, and stern—and accusing.

It suddenly dawned upon him—they looked upon him as a murderer! They would never believe—he could never explain— His arm had been pushed! He felt the distinct, powerful shove that sent the blade into the brain! Evidence! What damning, circumstantial evidence— Fifty people would swear that he had murdered the Governor of New York!

But he knew that his arm had been deliberately pushed. He called to the bodyguard. "Allow no one to leave this room. Guard that door!" They planted themselves before the single exit. The surgeon gazed into the faces of his immediate assistants, but their expressions revealed no understanding of how the crime had been committed.

Farrington, however, had not anticipated the alert action of Dr. Michel in guarding the doors. His situation became serious. The clock was ticking off precious seconds. Only a few minutes of invisibility were left, at best. To be thus cornered at the very scene of the crime would turn his carefully conceived plan into a boomerang. He had to escape!

High above him, the skylight provided the first hope. But to reach the ceiling without the aid of a ladder, or without being detected was out of the question. The figures of the detectives squarely in front of the door effectively eliminated the hope of using this exit.

Panic-stricken, Farrington realized that seconds now counted. A close approach to one of the detectives revealed a revolver in a holder beneath his open coat. He slowly made his way to this detective. In

one swift movement, the weapon was yanked from the holster and was brandished menacingly in mid-air before the astonished physicians.

"Hands up—every one!" A voice rang through the room. Then addressing the guards, it ordered, "Get away from that door!" The unarmed detective moved aside. The other officer moved, and then he made a swift movement to get his own gun out.

The unhandled gun suddenly spat, the shot reverbrating through the room. The detective's arm dropped limply to his side; he clutched the wounded member. Quickly, the suspended revolver moved toward the door. It opened. A fiendishly sarcastic laugh rang out. The revolver flew through the air and landed in the midst of the startled doctors. The door slammed closed.

● There was little doubt, now, in the minds of everyone, that some sinister force had actually caused the revolting crime that had occurred. The activity of the past few minutes had completely absolved Dr. Michel. The problem of determining what or who this mysterious thing was, now rested upon the police.

When Farrington had reached the outside of the hospital building, the biting cold suddenly reminded him that he had forgotten his coat—that it still lay where he had left it—in a corner of the operating room, invisible. For a moment, this thought caused him considerable concern. He might as well leave his visiting card on the Governor's body! But it was too late to make his way back. He walked to a deserted section of the hospital grounds to await his return to visibility. It was a close call, and he lighted a cigarette to steady his nerves.

Gradually, his form came into being. He dropped the cigarette and glanced around. Certainly his position would be viewed with suspicion if anyone saw him. Police were already scouring the city in search of a "phantom murderer." He walked to the nearby sidewalk and breathed more freely. At least, his presence on the sidewalk could not be held against him.

There was nothing more he could do now but wait—wait for developments; and laugh—laugh at the impossible antics of the police in attempting to locate a man whom they have never seen, whom they didn't know, and whom they could never prosecute as a murderer! He again thought of his coat that must also have, by this time, returned to visibility on the floor of the operating room, but he considered that it would be rather difficult for a district attorney to prove that he was on the scene merely because his coat was there!

EPILOGUE

● Early and alone, Howard Farrington was at his bench in the research laboratories, the next morning, as if nothing had happened. He was busily absorbed in his work when he became aware of a tap upon his shoulder. Without halting his activity, he turned his head to inquire what was wanted. It was the chief engineer of the laboratory, accompanied by two men. It required no great sense of imagination to realize who the strangers were—in fact, he was expecting them. No doubt his coat had been found and they had come to inquire as to the reason for its being there.

"These two men from headquarters want to speak with you, Farrington," the engineer announced. Farrington ceased his work and turned toward them.

"Yes, gentlemen," he greeted amiably, "what can I do for you."

The detectives eyed the man critically. They pointed to a nearby chair and urged that he "sit down. Just a few questions to ask you."

Farrington obligingly did as requested.

"What was your coat doing in the Albany Hospital, Mr. Farrington?" one of the officers began.

"My coat—in Albany Hospital?" he asked, surprised. He chuckled. "Well, it certainly went a long way. Thanks for finding it for me. It was stolen from a

restaurant while I was at dinner the day before yesterday."

"Then, of course, you know nothing about the death of Governor Johnston," the detective pursued.

"Why, of course not," Farrington replied. "Except, of course, what I've read in the papers."

"Oh, sure, sure," the questioning officer agreed. "Then you won't mind if we take a finger-print or two. It will just help to clear things up, y'know." He motioned to his partner who carried a small black box.

From the case he removed a photograph of a fingerprint, greatly enlarged. The print was photographed on a gun. Farrington looked at the picture. His jaw dropped. The gun he had thrown back into the room! They need not compare fingerprints. There was little doubt but that it would soon be discovered just who the phantom murderer was!

The man who operated the little box took his fingerprints. It would be useless to remonstrate. The truth would soon be known. But they would never get him—never! To attempt to break away would be foolhardy. But if he could only get into the high frequency chamber! . . . .

A nod of approval from the fingerprint expert to the questioning detective brought the anticipated command. "You'd better come along with us, Farrington."

Farrington signified his willingness to accompany the officers, but suddenly paused. "If you don't mind, I'd better cut the current from the high frequency apparatus before I go. It's dangerous to leave it running," he said.

The detective hesitated. "Well, all right. But I'd better go along with your."

Farrington led the way through the door of the high frequency room. "Sit down a moment, officer," he suggested. "I'll only be a minute. Better sit near the door—that's the only way out," he added with a touch of sarcasm.

The detective accepted the proffered chair, placing it directly in front of the exit. Hurriedly, Farrington made several adjustments on the machine, and then threw the switch. The low hum of the generators rose slowly up the scale until it reached the pitch of a screeching whistle—and soared into the nothingness of inaudibility.

Nonchalantly, Farrington stepped upon the large copper disk on the floor and simulated some necessary activity. For a few brief seconds, he stood still while the detective looked at him quizzically. An almost absolute silence reigned. Only the low, steady synchronous whir of the motor driving the generator broke the stillness of the room.

The detective watched Farrington. Something was happening. The form of his prisoner was growing dim—misty. He rubbed his eyes and peered again upon the spot where Farrington stood. He had vanished—disappeared.

Suddenly he realized what had occurred. This was the phantom—the invisible man who could, at will, melt into the thin air! The detective decided that if this was the case, he must at least be in the room with him. He yelled for the other detective and the chief engineer. He opened the door carefully, and let them in.

"Shut this thing off," he ordered. "And keep that door closed! Farrington disappeared before my very eyes! Why, I'd never have believed it!"

The engineer pulled the switch.

"Run outside and get a few uniformed men up here," the detective ordered the chief. The latter ran to the door to do so, but turned before opening it to warn: "Watch that switch. Don't allow it to be thrown back into contact!"

Farrington had been under the rays only long enough to give him about 10 minutes of invisibility. He had to get out of the room in that time. He could only wait—and hope that they might believe themselves mistaken—or think that they were waiting in vain. The detective had called several times to make himself known, but to answer would be foolhardy. He knew then that he must make a break.

With an impulsive decision, Farrington struck the detective who stood before

the door a resounding blow upon the jaw that knocked him off his feet. In a flash, he made the door and proceeded to open it. But the other detective was prepared. Throwing his full weight upon the door, he slammed it shut.

There was no doubt, now, that Farrington was in the room. The latter looked up at the clock. Five minutes more!

Suddenly his eyes espied the glass-enclosed box on the wall—the "In-Case-of-Fire" equipment. Only by breaking the glass could he obtain an ax that might win escape for him. A small monkey-wrench flew against the case. The glass splintered. But the detectives were alert. "If anything in that case moves, Farrington, I'll shoot directly in line for it," the officer warned.

It was useless. Two minutes were left. They would never capture him alive! In final desperation, Farrington eyed each piece of apparatus in the room, stopping finally upon the power generator that provided high voltage for the laboratory. It was running—humming almost noiselessly. Its two bronze electrodes carried enough free current to cause instant death. He had only to cross the room to grasp them.

The chief engineer, returning with two uniformed patrolmen, pounded on the door. As one detective turned cautiously to let them in, a wild laugh echoed through the room. As they burst into the room, there was a blinding flash of light and a wisp of smoke. The engineer, alone sensing the situation, rushed to halt the flow of current in the generator.

A dull thud sounded on the floor at his feet. The five men looked down at the spot. Slowly, the stiff, distorted form of Howard Farrington returned to visibility . . . .

THE END

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WONDER STORIES—*ON ALL NEWSSTANDS*

(Illustration by Winter)

"Hold," shouted the charging captain of the *Earth Guard* "Hold, or we fire! All right, rake 'em boys, we owe them plenty!"

AN EPISODE ON IO

By J. HARVEY HAGGARD

● Mr. Haggard's stories of adventure and action on alien worlds are becoming great favorites of our readers.

How did life first come upon the earth? There has been much conjecture on this subject. One logical belief is that life was generated by a chance combination of the life elements. If this be the case, the resulting life-forms, of course, were simple one-celled amoeba, which, through millions of years of existence, evolved into every living creature alive today, including man. Suppose some scientist should some day discover the formula for the creation of life? It is far from impossible.

Whether you agree with our author's theories or not, you will find this a most absorbing tale. Lifelike characters, vivid scenes, and breath-taking action can always be found in Mr. Haggard's stories.

● Of course Peter Flaxon had never walked the plank of a pirate vessel, being some centuries too late to participate in such an exciting occasion, but he believed that he was experiencing a sensation quite similar as he walked down the gangplank from the big airlock of the bulging space freighter, one of the *Earth-Neptune Space Liners*. Three men had walked before him, alone and under the same circumstances. None of them had ever come back.

An odor of over-ripe fruit and blossoms wafted from the dense jungle greeted his nostrils, and he could vaguely hear the dull ominous throbbing of animal noises in the bush. Those magnificent flower blossoms hanging from the dense jungle like jack-o-lanterns, some of them yards across, seemed almost alive. They possessed, or seemed to possess, that queerly alive personality which a carnivorous flower usually has; a dangerous malignancy which man had learned to hate with the less fortunate, lower animals and insects.

This was Io! Yes, this was the barbarous uncivilized moon-planet for which they had crossed millions of miles of empty space. Wild beasts roved those jungles and huge insects flitted through their boughs. And in this dense wilderness, the only habitable body of the planet Jupiter and her entire train of nine moons, the very last outpost of civilization was located.

Two men and a girl, and of course the three men who had preceded Peter to this first satellite of Jupiter, who might or might not be dead, made up all of the human beings on this wild savage satellite. Other than the captain and crew of the freighter which touched Io every four months as it navigated space between Earth and the outer planets with which a regular interchange of commerce was maintained, not half a dozen men had ever seen Io, though many had heard of the magnificent diamonds and jewels which came from her.

Those diamonds and jewels had established the trading post on Io, and thus it was only through man's greed and his love for precious stones that Io was populated by terrestrials at all.

A corrugated roof gleaming through greenery revealed the whereabouts of the trading post, and from the distance it appeared to be constructed entirely of metal, though most of it was shrouded by dense climbing creepers.

A broad pathway led down from the vine-covered front of the trading post. Down this, rolling a barrel of heavy metal, were two men—huge monstrous fellows who caused the newcomer to stare

Peter Flaxon was six feet, built proportionately, and physically a very competent young fellow. But these fellows would have towered over him some two feet or more, and their giant naked bodies, clad but in scant skin loincloths, revealed flesh of a white toady hue, bulging with great muscles. Peter Flaxon was lighting a cigarette when he sighted the two giants rolling the huge barrel down the pathway and he almost burned himself as he continued to stare.

When the two huge fellows rolled the barrel to a standstill before the space freighter and straightened up, Peter did burn himself. He was quite frankly astonished and inasmuch as there was no need to hide his surprise, he made no effort to do so. Extinguishing the match with a flip of his hand, he tossed it away and pulled the cigarette from his lip.

Then he heard a chuckle. Horny old Captain Doggan of the freighter stood on the gangway behind him. Peter was an amiable and agreeable young man and he had made friends at once during the tedious voyage with the short squat captain. He turned to find Captain Doggan, who was smiling from ear to ear, and his huge nose seemed more red than ever.

"Yu' shore got took up some then, matey!" bellowed the captain. "Say, blast me, the first time I seen them buzzards I like to shed my last year's skin, so I did! Them's natives, Peter," he ended with a gesture of his stubby, hairy thumb, as though proud of his knowledge. "Old Trader Bullock hez had them workin' for him quite a spell! An' lissen, here he comes now, but atween you and me, Bullock's a tough customer, as I thinks! Far be it from me to run a man down behind hiz back, but you're gonna be here four months with nary a soul but yoreself, Trader Bullock, and old Teston and his girl." Captain Doggan straightened up and nudged ahead, then shoved back his cap and scratched deep in the sparse hair which sprayed out over his ears, looking up the trail where another man was approaching.

But Peter did not turn at once. Those monstrous men-like creatures had strangely affected him. For when they had straightened up, he was staring into broad scabby patches of skin which gaped blankly from the front of the creatures' heads. The head of each was perfectly hairless, as was the rest of the body. Two beady eyes were sunken into scarred orifices. Each nose was but a gaping sucker which billowed open and shut as the creatures breathed, being covered by a yellow frothy slime that made Peter's stomach turn. They possessed no mouths, or perhaps they ate through the gaping nose-holes.

The great bulging shoulders were of a translucent unhealthy tinge, and blood veins were visible like red tracery. Following with his eyes down the gigantic arms which hung limply Peter saw there was no wrist joint, and instead of hands, there were two huge fingers which closed and opened like a trap.

There was something loathsome about the beings. Perhaps it was the utter lack of intelligence, the beastial immobility of the flat countenances, which made Peter shiver. He felt the same sort of repulsion he had once experienced when, as a boy, he had encountered slimy garden slugs.

● Trader Bullock by this time had come up to the group and had greeted Captain Doggan. He was an imposing man, huge and lean and muscled, with not unfriendly eyes, though they had a penetrating quality which seemed to pierce Peter through and through. A black beard hid his lower face.

"Gansha! Kubba!" the trader called at the idling natives. "Move! Go get another barrel!" And as the huge ungainly creatures shuffled lifelessly off, he turned with a grin. "Stupid creatures!" he commented. "Can't let them out of my sight! They haven't intelligence enough to remember what they are doing five minutes! You're the new man here. I suppose they gave you quite a turn!"

The last words were directed at Peter, and the trader extended a long hand, tanned and strong. His greeting was

warm; nothing in his manner justified Captain Doggan's suspicions. "Glad to have you here! It certainly does get monotonous these long months waiting by myself! Those other fellows were all right until—" he broke off, and a shadow of trouble passed over his face, "—until they went! I suppose that's why you have come, Mr. Flaxon, to solve the mystery of their disappearance."

Peter, keenly studying the man opposite him, answered:

"Yes; that's it! I'm in the service of the *Earth-Guard*, you know, space police. I couldn't get head or tails of what has happened to them. Carewe, and Shapely, and Gormly. I knew them all, and I'm going to do everything I can to clear up the mystery. You reported that they wandered off into the jungle, and never came back."

"Right," returned Bullock. "Just a minute, sir!"

Captain Doggan had rudely turned his back, and now his crew had opened a huge port in the freighter's side. The two huge natives had returned with more barrels and Bullock aided them in handing them up to the freighter's crew.

Presently all was aboard and the porthole closed again. Captain Doggan poked his head out of the airlock as the gangway lifted up. Ignoring Trader Bullock, he called to Peter.

"Goodbye, Mr. Flaxon!" he called. "Don't fall for thet bronze-haired wench of Doctor Teston's. She sure is a pippin! Well, I hope I'll be seein' you again!" A frown of doubt appeared on his face, as though he really doubted whether he would see Peter again when four months later his space-ship would dock, back at Io, with supplies in exchange for jewels. A pile of boxes had been left on the ground, and the two natives impassively had proceeded to carry them up into the trading post.

The face of Captain Doggan disappeared and the airlock clanged to with a muffled grating of huge inner metal levers. As the space-ship pulled in its ports and sealed itself up like a terrapin, a sense of being shut away from the other world came over Peter. The signal whistle of the space-ship screamed in their ears. As they backed away, Peter caught sight of Captain Doggan, high up in the nose of the ship, where he stood over the pilot, only part of his body being visible through the transparent prow of the control room. Peter waved again; and then suddenly the degravite screens on the side of the ship opened up like so many tiny wings, and with a sullen *swoosh*, the huge ship floated up into the air.

Peter watched it vanish swiftly in the pink sky. The last tie to civilization was gone. He felt strangely alone. As the speck dwindled, he was aware that Trader Bullock was speaking.

"A bull-headed fellow, that captain!" he was saying. "I can't get along with him. He shorted me twice on supplies and I had to call him up pretty sharply. Since that we haven't gotten along."

"I liked him pretty well," said Peter, curtly.

"I'm sorry," apologized Bullock graciously. "I'll speak no more of my personal enmity, Mr. Flaxon."

They turned to walk up toward the trading building. Peter's luggage, which had been deposited with the rest of the supplies, had already been carried up by the natives. Despite the apparent courtesy, Peter was aware that his host was silently weighing him with shrewd eyes. He realized that as yet Bullock had not proven that he was not the one Peter sought. In fact, he was one of the only two men on the satellite. He was either frankly innocent and anxious to help Peter, or he was very clever, and was secretly laughing at Peter from behind the penetrating eyes. Peter wasn't sure which was the case.

CHAPTER II

A Night Encounter

● As Peter neared the structure, he noticed something he had not seen before. Beyond the structure a sloping beach ran down to a sluggish black river. A group of brush huts, which Peter guessed to be

native huts, was built in a mass about the boles of a grove of trees. He caught sight of several of the huge fleshy natives lolling about.

Suddenly, two of the natives who had been concealed in shrubbery by the door front, appeared with crossed spears. At a word from the trader, Jim Bullock, they resumed their seats upon crude benches at either side, though they appeared to glare venomously at Peter. They were acting as sentinels, and it gave Peter a chilling thought to think of the impregnability of this metal structure against attack.

"I've trained the natives into warriors," said Jim Bullock, noting his curious stare at the sentinels. "Why not? I don't wish to wake up some morning dead!—as some others have here in the past. They're as fine a body of soldiers as you ever saw. I'll show you how I train them tomorrow."

Peter gasped when he entered the front room. It was lavishly and expensively furnished. Thick purple rugs lay on the floor—comfortable leather-bound furniture was grouped about. Expensive tapestries hung on the walls.

"Yes, it's comfortable," admitted Jim Bullock. "It's all I have. Years ago I used to go back to earth every year, but now, I never leave." Peter found a washpan, performed his ablutions, and when he returned, he observed that Gansha and Kubba had prepared a meal. He ate silently, and was continually aware of Jim Bullock's quiet surveyal. When they were through, Jim Bullock relaxed with a sigh. Tired lines were revealed in his face.

"Mr. Flaxon," he said, "I'm glad you've come. And I'm going to tell you all I know. I've been here seven years. The only other man on Io is a recluse, a scientist who came here to perform uncountenanced experiments."

"Dr. Teston?" queried Peter.

"Yes," returned Jim Bullock, puffing slowly on an aged pipe. His whiskers almost hid it. "Yes, I know what you're thinking. No men in their right minds would come here, to be alone. Well, perhaps you're right. I tired of humankind, and came here, but Professor Teston came for other and dire purposes. We have never been friends. His hospital, shall we call it, is six miles up the river. There he lives with his daughter. I don't know what he does, nor do I know why your companions, the detectives from the *Earth-Guard* came, but I do know that they reached Dr. Teston's hospital."

Peter listened eagerly to this description of Dr. Teston and his daughter. Ten years ago Dr. Teston had arrived with a space-ship. He had brought builders and carpenters; when the laboratory structure was completed he had taken the builders away. He had brought only his wife and little daughter back. His wife had subsequently died.

Could this be the man? Or was the man he sought sitting opposite him, so confidently pouring out his story. Peter felt that he was deep and crafty.

Night had come on almost unaware to the men. Presently Jim Bullock lighted a gas lamp and showed Peter to a room in the rear. This room was less lavishly furnished than the other, but the bed seemed cool and inviting. Peter Flaxon, after extinguishing the light, sat for a long time in the darkness. He caressed a tiny projectile gun, which was capable of sending a chattering stream of tiny projectiles as rapidly as would the old-fashioned machine gun.

Late that night Peter awakened; some inexplicable sixth sense had tweaked him into wakefulness, for he suddenly found himself tense in utter blackness, his ears straining to catch the slightest sound and his eyes boring futilely into Stygian dark. His spine tingled alarmingly as his every sense strove to recall that which had awakened him.

● Men of the *Earth-Guard*, especially those in his own capacity, learned to develop the keenness of their senses to a high degree. Even though he were asleep, some slightest noise, a waft of strange odor, or a flicker of light, would be enough to rouse him to wakefulness, even

though his senses did not retain memory of the waking incident.

There! He heard it again. A scuffling sound, as of a huge beast stalking. It sounded just outside the door. There was a slow, very indistinct grating. Someone was opening the door!

It was with a cold chill of helplessness that Peter realized the situation. No outside light penetrated into the room, and if there was a window, it must have been heavily curtained. Slowly, softly, Peter reached beneath the pillow under his head and grasped the comforting pressure of the projectile gun. Moving softly, he sat upright in bed, seized his trousers and secured from a pocket a tiny compact flash-beam. He tensed; and the door opened almost noiselessly. A soft draft of breeze, poison with the redolent fragrance of Ionian jungles, stole into the room. There was a cautious footstep.

Peter snapped on the light beam. There was a scurry of motion, too brief for the eye to follow. A dark looming form had leaped back, and now nothing but the empty gaping door met Peter's eye. Beyond was the other end of a short hallway which ran in toward the front room.

Peter was not the sort of fellow to sit back and take it on the chin. He determined to force the issue. Rising, he quickly donned his trousers.

"Bullock!" he shouted loudly. "Jim Bullock! Hey, where are you?"

His stentorious bellowing should almost have wakened the dead. But there was no response; the dark house echoed his words hollowly. With the gun in his right hand and the beam in his left, Peter stepped cautiously into the hallway, playing the light ahead of him. The dancing finger of light revealed an empty hallway which mocked him. Again he called:

"Jim! Jim Bullock!"

Crossing swiftly to the door of the other bedroom across the hall, which Bullock had informed him was his own sleeping quarters, Peter pounded on the door. He could hear no sound from within, but as he pounded, the door fell ajar and swung inward.

Warily, Peter played the beam into the room. An unlit gas light was upon a table. A bed, which certainly had not been slept in, was in the far corner. The room was unoccupied!

Where had his host gone? If Jim Bullock had had nothing to hide, why had he deluded his guest by thus informing him that he would sleep in the other bedroom, and then slip away?

The beam of light cut through the darkness and played upon the door leading to the front room. Peter determined to have it out; he certainly couldn't go to sleep with the knowledge that the man or thing which had been about to spring upon him was hiding somewhere in this house, crouching in some dark cranny waiting to spring upon him at the first available moment. Perhaps it had been Jim Bullock. Or—

Peter didn't wait to conjecture. He pushed the door open and, as before, played the light across the big room, across leathern divans, gorgeous carpets, heavy rich hangings. He could see nothing, so he ventured cautiously within, wary of every shadow. Reaching the center of the room, he played the flash about until he reached the conclusion that nothing larger than a cat could have hidden there without his being aware of it.

● However, something attracted his eye.

He shot the circle of light across the deep rugs, picked it out. It was a dark splotch against the purple plush. Peter stared, walked over to it. He picked it up and examined it gingerly.

It was a red knit girl's sweater, and long blonde hairs adhered to it. A tear in the fabric under the arm indicated that it might have come loose during a struggle. It was a very simple little garment, yet it added another unsolved mystery to those heaping up around Peter. A girl had been here; why! Supposing such was the case, why had Jim Bullock made no mention of it? And last but not least, there was the disturbing factor that this sweater had been torn forcibly from her shoulders. It was all quite evident that there had

been physical conflict. It could be none other than the girl; for there was but one girl to his knowledge on Io, the daughter of Dr. Teston, who according to Bullock, lived six miles up the river. Bullock had been strangely reticent, come to think of it, in speaking of the girl, Doreen. But was there any significance in that fact, other than that Jim Bullock was uninterested in the girl?

A slight sound came from behind. Whirling, Peter flung around the beam of light. It hesitated in the doorway. There a huge giant figure crouched, slavering and snarling; the hideous native *Gansha!* His beady eyes glittered greenishly, two live coals in the night, and the gaping nostril orifice pulsated passionately, flicking out a spray of slime and emitting a heart-chilling snuffle. Of the two natives, *Gansha* had been the largest if anything. His sickly toadish flesh seemed almost transparent, a cancerous blotch of almost lucent matter.

Then *Gansha*, s n a r l i n g hideously, sprang. It was no time for indecision, though Peter was far from cool. But before *Gansha* had reached him *t-t-t-t-t-t!* Almost like a soft whisper, the projectile gun poured its deadly tiny splinters into the body of the grotesque giant. Then *Gansha* had crashed across the room blindly, overturning a table and scattering books, lamp, trays and a scarf winding.

Peter dodged skillfully. *Gansha* charged on into the darkness beyond, uttering a ghastly moaning cry of high intensity. He plopped against the wall in the darkness and Peter whirled. He tripped even as he whirled, which revealed *Gansha* almost upon him. The fact that he was falling temporarily saved him, for again *Gansha* missed. A bloody froth was revealed foaming up from the sucker-like nose-opening of the giant native. But as Peter fell broadly upon the floor, the flash-beam was knocked from his hand. It crashed against an opposite wall and went out. Now, leaping wildly to his knees, Peter knew he was facing the monster practically without defense. In the dark, the gun—

He was right! The gun was useless, for an avalanche of stony muscle struck Peter square in the chest, throwing him backward, and the gun likewise fell into the darkness. Rolling aside, Peter leaped up and swung wildly in the gloom. A huge hand was clutching his thigh. Guessing more accurately than he knew, he swung, and the solid impact of hurt knuckles told him his fist had landed strong.

The hand on his thigh jarred, but still clung on. Peter swung again, his fist tangled with a curtain against one wall and then he was falling, tearing the curtain with him. In a jumbled mêlée, they hit the floor, curtain, terrestrial and native. Even yet it would have been short shrift for the earth-man had he not quickly wound the curtain about the huge neck and given a mighty twist, so that the nose orifice was completely stifled.

Gansha, bleeding in a dozen wounds, still struggled on, though fortunately his struggles were weakening and Peter was able to cling to the curtain.

Then suddenly there came footsteps running up the pathway from without. A key grated in the lock and the door swung open. Bright "moonlight" from the planet Jupiter flooded into the room. Jim Bullock sprang in and lighted a lamp.

CHAPTER III

Synthetic Men

● As the light illumined the scene, he stared blankly.

"Flaxon!" he cried. "My God! And *Gansha! Gansha!* Why, he attacked you!"

Gansha, struggling free, rose woodenly, facing his master with a stupid expression. Jim Bullock's face turned purple with horror and anger. Seizing a bull-whip from the wall, he fell upon the stumbling giant. For a moment *Gansha* cowered, a light of hate glowing in his eyes, and then he backed slowly toward the door.

"Back! Back to your den!" shouted Bullock, popping whip left and right and cutting great welts across the native's naked breast. "Back, you spawn of hell!"

When he had driven the creature from the room, Jim Bullock came and set the lamp on a chair near Peter. His gaunt old hand was trembling.

"My God!" he cried. "This is awful! But it's what I feared. Come, Mr. Flaxon, are you hurt? Oh, believe me, I wouldn't have had this happen for the world!"

Peter got to his feet, not knowing whether to be angry or amused.

"I guess I got off all right," he said, after he made a successful search for his gun. "But I want to know what the hell it's all about! I certainly deserve an explanation, and remember, I got this gun right here on me."

But Jim Bullock hardly heard him. He had sunk into a chair and buried his bearded face in his hands. His hands trembled, and his shoulders shook. When he finally controlled himself and looked up, a fear had come into his eyes and deep lines etched the upper edges of his cheeks.

"Yes, Mr. Flaxon," he said. "You certainly deserve an explanation. And I'll tell you before heaven that I'm not responsible for what has happened tonight! If you only knew! But you shall. You deserve a full explanation."

Peter lighted a cigarette and wiped the blood from one arm. He sat down opposite Jim Bullock sullenly.

"Yes, I want to know where you were tonight, and why that beast came in here, and last of all, where this girl's sweater came from?"

He produced the sweater, poking it in toward Bullock's huge face. Bullock started.

"You found that?" he asked. "Yes. Doreen was here tonight. She was frantic, poor girl, and I had to take her home. But I see you're lost, so I'll start at the beginning, with *Gansha*, and with *Kubba* and all the rest of that ghastly crew. Captain Doggan thinks they're natives; I thought it best to let them think so! But did you ever hear of an intelligent native on Io? No, for this satellite is peopled by savage beasts and covered with jungles."

"What are you driving at?" queried Peter, puffing slowly. He was analyzing the man before him, or rather trying to. Then Bullock continued.

"Just this. You've heard of Dr. Teston and his mysterious reason for coming to Io! Well, what do you think it was, what incentive do you think could have urged a man of the repute and possibilities of Dr. Teston to abandon a prosperous practice on earth, dragging with him his wife and daughter into such a hell-hole as Io? Think—it must have been something very great—something very frantic! Something which he could not have accomplished in the scope of ordinary worlds! Well, I'll tell you. Dr. Teston came to Io to manufacture *synthetic men!*"

"What!" gasped Peter.

"Just that. And what I'm driving at is that these creatures, *Gansha* and *Kubba* and the rest, are just *synthetic men*, created by the madman's touch of genius which is within Dr. Teston. For Doreen's sake I have kept it quiet! At Dr. Teston's insistence, I have taken a goodly number of synthetic men to train and tutor, though God knows, were it not for Doreen, I would have long ago left this hell-hole. The hell of this life killed his wife, and it's killing Doreen."

● Peter could read the truth in the other's eyes. Nothing could deny the sincerity of his tone. And with these valuable facts, a suspicion was crystallizing in his mind, and the web was unraveling, to become a more compact, more understandable [illegible].

"Synthetic men," he mused. "I didn't think it possible!"

"At this day and age!" rejoined Bullock. "I'll tell you how Dr. Teston explained it to me, and how he does it, for I personally have watched him, and I know. A great scientist* averred that life quite possibly began ages ago, when animo acids were formed. An electrical discharge during an electric storm might have united nitrogen, hydrogen and oxygen in the damp air, forming nitrite of ammonia,

*J. Arthur Thomson, in "Modern Science"

which the rain would carry down into a pool. If this pool contained formaldehyde, which might have been caused by sunlight uniting carbonic acid and water, then the two solutions might form animo acids, which contain proteins, and are the biggest factors composing organic life.

"To make it short, Dr. Teston succeeded, and he learned not only how to make life but to bestow bone-making and muscle-making constituents into his solutions. Of course he creates electrical discharges artificially, but it is really this, the electric spark, which gives life. Thus it is really a simple transformation of energy, since Einstein has declared that electricity and matter, perhaps even life itself, are different forms of the same energy."

Jim Bullock was trembling as he finished. Peter had again pocketed his gun, and Bullock, who seemed to have aged greatly during the talk, went to a sideboard and poured himself a stiff drink. Then he turned impulsively to Peter.

"There it lies," he said. "The entire story. Those inhuman brutes out there are sexless automatons. For Dr. Teston has never discovered the secret of reproduction of sex. He could not manufacture brains. The creatures are merely capable of registering a distinct command, and obeying it. They've nothing of passion, of feeling."

Peter thrummed the arm of the chair with his fingers. There were still several points which were unsolved. For Jim Bullock had not explained why the red sweater had been *torn from* the girl. And if *Gansha* was a mass of synthetic life, as he might well be, then someone had commanded him that night to kill Peter. Who could that have been? However, it seemed discretion to remain silent upon these questions. Peter felt that he would know all that soon enough.

"I'll go to see the scientist tomorrow," he said.

"Good," returned Bullock, twisting his black beard between shaking fingers. "I shall lend you a boat, with *Kubba* to row."

"Thank you," said Peter dryly. "After tonight's experience with one synthetic man, I prefer to go alone."

"As you wish," returned Jim Bullock. "And now I will lock the doors and bolt the windows. You may sleep safely the rest of the night."

Though he returned to the dark bedroom, Peter slept little. When he awoke from a doze, he discovered a sunbeam peeking in through the shutter before a round-paned window. Nights on Io were but eight hours in duration. Hearing the steady trample of many feet and crisp barked commands, Peter pushed back the shutter. He could see a broad bare expanse of the beach beyond the grouping of huts. Here he saw an amazing spectacle.

Marching in perfect coördination, rank upon rank of the synthetic men filed, wheeled, broke ranks, and engaged in sham charges, all at the precise command of the man who directed them—Jim Bullock. Furthermore, the early morning sunlight glinted on the steel of bayonets, for each of the synthetic men carried a rifle.

● Peter was astounded at the number of synthetic men, which must well have reached two hundred. As he watched, the artificial men engaged in a sham charge, and a volley of shots resounded as they aimed at a target. Then they were up, plunging and lunging in a fancied bayonet charge. How easy it would have been for Jim Bullock to order the synthetic men to murder Peter, to march up to the house and shoot him full of holes.

Peter became aware that he was alone. He went through the house. Other than the sentinels outside the doorstep, it was deserted. Then swiftly and lithely, he made a search, not stopping at the front rooms, but peering into those in the rear, and into the sheds adjoining the rear. There were no locked doors. In one room he found several bags of glittering jewels, though they were of no great value.

But Peter had not yet found what he sought, and he returned to the main house.

Later, at breakfast, Jim Bullock wiped the sweat from his brow.

"You saw the drill," he said, a mocking depth in his eye. "I'm proud of those synthetic men. They are perfect soldiers! No insubordination and perfect command. They would die obeying a command, for they can feel no hurt; neither would they feel pain at death."

Peter shuddered. "I'd rather hate to have them against me," he said.

"You just bet!" returned Jim Bullock. "You wouldn't last ten minutes!"

Later in the morning, Peter sighed with relief as he entered the trim native canoe, hollowed from a tree trunk, and bade goodbye to the grisled old trader.

"Just keep pulling!" yelled Bullock jovially. "You can't miss it!"

With lusty strokes, Peter urged the canoe around a bend and lost sight of the trading post. He pulled steadily. Many times he glimpsed grotesque water monsters, and occasionally a particularly grotesque tree or growth overlapping the water's edge drew his interest. There were many trees with great cup-shaped crimson blossoms. The sun came out glaringly, and sweat rolled down his bare arms. The days were but eight hours long, and already the sun had reached its zenith. After a couple of hours of rowing against the current, his muscles ached with fatigue.

Peter was certain that five miles had been covered when a white puff of smoke jutted out of a bit of jungle growth by the water's edge.

Spang! A bullet hit the water in front of Peter and skipped screamingly across the river. *Bang!* Another.

Peter drew in his oars quickly. Seizing his projectile gun, he pulled the trigger and raked the underbrush. For a long moment there was utter silence as he drifted downstream. Then above the rippling of the water he could hear a swift patter of retreating footsteps, while jungle fowls screeched harshly at someone who ran back up a hidden path in the jungle.

Peter seized the oars and rowed swiftly toward the spot from whence the bullets had come. He did not know who had fired the shots, but he was certain that the man he sought was up there behind the jungle bush. With swift strong strokes, the boat shot shoreward, toward a slight indention in the river's bank, over which hung a jungle giant bearing huge crimson flowers. Peter, intent upon grounding the light craft, paid no heed to the huge tree. Then suddenly he discerned a swift movement above. He saw a huge crimson bell-like flower turning rapidly. A coiled liana within the gorgeous golden mouth darted downward. Other huge flowers also were turning down their gaping maws.

An agonized instant—for Peter. His eyes, for a horrible second, had turned to something else, swinging in the twining lianas above. It was a skeleton, bleached and white, hanging high on a limb like a scarecrow.

It was a trap! These were carnivorous plants! Above him, doubtlessly, hung the remains of one of the three who had preceded him, and perhaps somewhere along the river were the bones of the other two. Lured by a shot from the shore they had turned their craft into the gaping jaws of death.

Peter's vocal chords were trying to scream, but he was paralyzed with sheer terror.

CHAPTER IV

The Laboratory

● Peter flung himself back and he lurched from the boat as it overturned. A stinging tendon lashed across his face and then he was plunging down in muddy raging waters. His head struck a root; he kicked the bank and swam deeply under the water out toward the middle of the current. When his lungs were bursting, he arose, spitting water and gasping. Squirming creatures nibbled at him as he treaded water and stared shoreward.

The great red flowers were still clinging reluctantly to the half-submerged boat. Other than that, however, he perceived nothing out of the ordinary. With lusty strokes and a raging fury, he swam downstream, looking for a barren bar upon which to land. He found one presently

and dragged himself out upon steaming sands.

A water snake writhed away as he lay breathing deeply, making no attempt to strike at him. Peter felt among his drenched clothing. His gun, which had been lying in the boat, was gone. He was weaponless, but determined. After he thought he had rested sufficiently, he made his way up into the dense jungle. Leading up from the bar were numerous dark trails, almost tunnels, which led back into the jungle. Selecting a stout sapling, he broke away the twigs and constructed a short but reliable club which would prove quite effective at close range with any beast which might spring upon him.

Then he worked his way back up the river and presently was looking warily out upon the giant carnivorous jungle vine, which had so narrowly missed Peter's body for a noon-day meal. Searching carefully, he finally came upon a trail where freshly broken twigs appraised him of the passage of the man who had made the attack upon him. He followed slowly, and as the hours rolled by and the sun waned, he became aware that he was alone in a savage jungle, and jungle night was almost upon him. He quickened his steps. From the sides, he heard the savage snarling of jungle beasts, which grew louder and more numerous as night approached.

Three men had gone before Peter; was he to be the fourth?

In a tiny room from which no light escaped, a weird figure sat before complicated controls and dials. A lead hood was pulled over the man's head and through thick quartz lenses his eyes were enlarged enormously. His body and arms were likewise covered in a plastic lead armor. Above, in the exact center of the tiny cell, glowed a keen eye—blinding light, shedding its ray directly down upon a transparent tube of glass through which a thick pinkish liquid flowed sluggishly. This liquid coiled about through the glass tubes which led from various apparatus and was conducted by a huge main-pipe through an opening in the wall.

The figure chuckled as he noted the dials and gauges. Ah—the preparation was nearing completion. Nothing could have been better. For six weeks—the correct length of time—the liquid had lain under an ultra-visible ray, dormant, but germinating, awaiting but a final spark before life would come.

The figure pounded the desk enthusiastically.

"Fine! There should be a fine batch!" he cried, and turning, he opened a door and left the tiny cell to emerge in a great room where a vast tank of the sluggish liquid lay, sparkling with vital energy.

Overhead hung giant coils and contacts. Two great brass spheres protruded from opposite ends of the domed ceiling. Through a skylight, the blackness of the Ionian night was visible. A huge generator whined, and as the man walked over to see the charge delivered, he again chuckled.

Everything was perfect, as it had been in the past, when he gave that last vital spark, the divine spark, to the *almost* organic fluid.

● Twenty-four tables were in the center of the room, and on each of the tables was a metal form, like the molding of a sculptor. Within these forms, which were shaped closely to the resemblance of a man, was supported bony skeleton-work, white ashy rods and joints, hinged loosely.

A conduit ran from the main tank of effervescent liquid. In it was a flexible tube which would stretch the length of the room, for it lay in huge coils at the base of the tank. Table by table, the lead-sheathed man examined each, noting the temperature of the molding, for an electric heating device was attached to each; adjusting a lever here, carefully examining a dial there.

Sighing with contented pleasure, he now approached the flexible hose attached to the tank. There was a tap at the end of the hose. He carried it to each of the casts, turned the tap, and watched with glittering eyes as the liquid sparkled into the hollow mold, snugly fitting around the rods and hinges of bony structure. As each

mold filled, he drew the upper portion of it over on its hinges and shut the man-like mold-shaped quantity of sluggish liquid in its aperture. The upper mold revealed a tiny antenna, affixed to a brass knob which pointed upward at the huge knobs in the ceiling. Ultra-visible lights illuminated the scene eerily, and at last each of the twenty-four molds were closed tightly, and the tiny antennæ jutted up expectantly.

Now the lead-sheathed man approached a huge lever in the wall. There was a jagged sparkle of electricity as he closed the switch and the generator whined angrily under the load.

At first, nothing was apparent. Then a misty cloud of vapor began to form. A foggy cloud high up near the ceiling began to pulsate, to quiver. It thickened like smoke, grew larger in volume, and rolled surlily as the enraged growl of the generator continued under the increasing load.

Then suddenly the lead-sheathed man made another manipulation. A gigantic spark of lightning shot across the room from the gigantic brass spheres at opposite ends of the ceiling. It cut through the cloud of vapor like a sword, played fitfully; and then the vapor was falling in a drenching mist, while jagged little bits of splintering blue sparks played from the huge spheres down to the antenna over each molding.

Presently the mild mist ceased, the generator coasted to a stop, and all of the intense lights were extinguished. A black darkness hung like a pall within the room. Then echoed a hollow chuckle. Vague creaking noises were audible.

An electric light went on, revealing the lead-sheathed man at a switch. He looked over at the molding forms. The top covers were moving frantically, as though some being beneath was trying to arise.

Chuckling, the lead-sheathed figure made sure that each top was secure. Then he climbed the steps leading back to the tiny cell. He closed himself within the aperture and sat down by a radio sender. The tubes were presently glowing.

"Space-Ship Z 10! Calling, Space-Ship Z 10!" he intoned into the transmitter.

Presently an answering voice came, seeming to magically speak out of the nothingness above the maze of instruments.

"Space-Ship Z 10 answering. L Fifteen talking."

"Head X talking. Are you ready?"

"Ready," came the answer from nothingness. "Quite."

"Then proceed at once to Main Base. Head X talking. Repeat orders!"

"Proceed at once to Main Base! Everything X! L Fifteen talking!"

"Very good."

The lead-sheathed man arose, extinguished the lights, and left the cell in darkness. Long minutes passed: a half hour.

A muffled tread came outside and the door was pushed cautiously inward. The man who now entered wore no lead armor. He managed to find the lights, turn them on. He looked about, saw the wireless equipment and gave a gasp of delight.

"Fine and dandy!" he cried. "Just what I can use."

It was Peter Flaxon, somewhat dishevelled from his jungle trip, but all there, *and smiling!*

CHAPTER V

The Rocket and Shooting-Star

● Peter had about decided to spend the night in the jungle when the trail he was following led out into a clearing, in the center of which stood a great square blockade building, with a huge glass dome in its very center. He had lurked in the underbrush until nightfall, seeing no manifestations of life. Then, after black night had fallen, he had seen a flickering light glowing through the high ceiling. He skirted the grounds and hesitated before a huge vine-like runner which climbed the building sinuously. After a moment's hesitation, he scrambled up the vine. Then he cautiously climbed the dome and peered within. The dazzling light hurt his eyes, but he was able to see a good deal of

the somewhat amazing occurrence which transpired below.

He lay breathing heavily. Three others had preceded Peter. What they had come to find had nothing whatever to do with synthetic men. It had been a much more stable purpose.

For the enormous quantity of jewels which came annually from Io was found not to have been produced on the moon itself. Jewels had been marked and identified! The jewel-mining on Io was nothing but a very clever ruse. Diamonds and jewels from the outer planets were secretly landed on Io, and thence shipped directly to earth. It was a gigantic smuggling alliance, conspiring to escape the enormous fees which would have been exacted if taken to the earth from the other planets.

So Peter had been sent out on the mission of hunting down the smugglers. One of the white men on Io was the one he sought. But another reason also had brought this grim young man to the lonely satellite. He drew his lips tightly across his teeth; thinking of Carewe, Shapely and Gormly, the three men of the *Earth-Guard* who had come before him and had disappeared. Stalwart, upright young men, gallant and brave; they had risked their lives time and again for the honorable tradition of the *Rocket and Shooting-Star* emblem, the insignia of the *Earth-Guard*, which was feared and respected throughout the Solar System.

Peter gritted his teeth and stared down into the blinding glare. He saw the lights go off; presently to be replaced by the electric glare. A chill sensation crawled coldly up his spine as he saw the casts move under the exertion of the bodies below. He knew he was witnessing the manufacturing of synthetic men, and it gave him a strange feeling of horror; it was diabolical and inhuman to create the great living brutes such as *Gansha*, with whom he had fought.

When the lead-sheathed man climbed the stairs to his tiny cell, Peter's eyes widened. Projecting from the cell was a tiny antenna. Directly overhead, projecting up from the dome like a mast, was a spire which lifted larger antennæ aloft into the dark sky.

A cold wind had arisen. From the jungle came the snarling of beasts and occasional cries of jungle fowl. Peter shivered; for his wet clothes were chilling him with cold, and he started as a section of the skylight rattled with his hand.

He quieted it suddenly. Apparently it had not been heard. Then he saw that a small section of the glass slid aside and that a thin steel ladderway swung down along the inner side of the dome to the floor of the structure. A plan came instantly into his mind.

He settled down to wait. Presently the lead-sheathed one emerged from the tiny cell, walked down the steps, switched off the lights, and left the room.

After he had waited for what he thought was a safe margin of time, Peter had shoved back the glass and pushed his lower body into the darkness, feeling for the rungs below.

Eventually and with due caution, he had made his way through the tables with their grisly burdens, up the stairs to the little radio room. Peter Flaxon laughed softly as he slid earphones down over his blond hair.

● Dawn again found Io, the little satellite, swinging around the great planet Jupiter, the one habitable body of the planet and her moons. Dawn, slanting down through the atmosphere, tinged the jungle top deep purple. The purple faded slowly, and various colors dimly raced each other in a prismic pattern across the jungle until a pink radiant sunshine bathed the little moon. The sun also caught a reflection upon a large metal structure coasting down through the higher stratospheres of Io.

It was a spherical unobstrusive spaceship, camouflaged a speckled black so that it would not show up against the background of space. But the tell-tale sun, shining directly upon its surface, cast glinting reflections from the broad metal bands riveted about the super-structure,

and upon the glassite port-windows which gazed hollowly into vacant space.

This space-ship, which was similar in structure to many other space vehicles used in the outer orbits, dived down almost vertically, decisively displaying a set, premeditated course. She dived down over the jungle and settled in a clearing beside a huge stockade, from whose upper story jutted a great glassite dome. Settling as silently as a ghost, the vessel swiftly cast out gangways and opened huge portholes.

From the stockade, a man came running, followed by huge stolid hulking creatures who impassively plodded along. The one in charge of the vessel hurriedly hailed the one who approached, and without more ado, the business of hauling in the cargo to the stockade was commenced. Long lines of men and huge half-naked creatures formed between the space-ship and the open door of the stockade, each bearing casks or boxes.

Then, like a wraith out of oblivion, another huge oval form jutted up into the pinkish sky and settled swiftly. Frightened cries came from the men who were bearing the burdens and they broke their line as they started to flee. The captain and the owner stood by the open porthole conversing, when the great metal wraith floated down like a giant chicken-hawk. Settling swiftly beside the other space-ship, it poured forth men garbed in silvery metalline uniforms.

The captain, standing by the porthole, stared horrified. What his frightened eyes were fastened on was the huge insignia painted across the snub nose of the newcomer vessel. It was the *Rocket and Shooting-Star* emblem of the *Space-Guard*.

The men in silvery uniforms quickly ran toward the line of burden-bearers. Men flung down their burdens to run; only the impassive synthetic men plodding stolidly onward, as if nothing had occurred.

The captain leaped back through the porthole of his vessel, shouting orders stentoriously. His crew, or the few men close enough to leap into the space-ship before the doors clanged to, ran with all haste to the bellowed duties, and the command was given to ascend.

"Hold!" shouted the charging captain of the *Earth-Guard*. "Hold, or we fire! All right, rake 'em boys, we owe them plenty!"

The long skinny metal levelers in the hands of the *Earth-Guard* snapped level and a stream of speeding projectiles crashed up into the transparent prow of the space vessel. The ship was hopelessly riddled before she rose ten feet from the ground, the vacuum walls perforated like so much tin.

It slumped back to the ground. Up on the prow, the captain, reeling into view, held up his hands in surrender. Firing ceased; but the captain had been hit, for he spun 'round and fell from the high conning-tower to the ground.

Peter Flaxon had seen all this from his perch among the heavy vines atop the stockade. The scene had given him very little surprise, inasmuch as everything had happened just as planned. He had radioed the *Earth-Guard* vessel the night before. Now Peter was again sliding back the glass panel in the dome, and again he descended to the room where the molds still worked agitatedly. He ran up a passage crowded with great giant synthetic men, who eyed him dumbly, and since they had not been commanded to do otherwise, let him pass.

Peter opened a door from a corridor to find himself in the household proper of Dr. Teston. He shouted, but there was no response. The room was in confusion, tables overturned, chairs in fragments.

Peter examined the doors in the rear. Two closets, a kitchen. He paused, hearing a muffled thumping noise.

It appeared to emanate from a rear room, the door to which, as he tried it, proved to be locked. Peter drew back a few steps, and threw his full weight against the door. It burst inward.

Before him stood a muffled, bound figure, who had been bumping against the door despite the bonds. Peter quickly un-

tied the bonds and removed the gag which prevented the captive from crying out.

He saw a girl, attractive, who could be no more than twenty. Her deep brown eyes were sparkling with rage. She stared in astonishment at Peter.

"You're Doreen?" queried Peter.

"Yes, but who are you and how'd you know?"

"Peter Flaxon of the *Earth-Guard* at your service," returned that young man.

CHAPTER VI

Return From Io

● *"Earth-Guard!"* exclaimed Doreen, her eyes opening widely. "Great! There's a score I've got to settle—"

"And no time to be lost," said Peter. "Can you manage by yourself?"

The girl took a few faltering steps, then smiled. "I'll manage," she promised. Peter turned and hastily retraced his steps. He pushed his way between the huge, stupid synthetic men and opened the front door. An aged man stumbled toward him. It was Jim Bullock, and there was a vague wonderment in his eyes. He tugged at his beard in bewilderment.

"Mr. Flaxon!" he cried. "What does this mean? I have just arrived, and I found all this turmoil."

Peter smiled and lighted a cigarette, though his eyes never left Jim Bullock. "It merely means," he said, "that we have reached the end of a long, long trail."

"What do you mean?" questioned Bullock, shaking his head.

"One of the biggest smuggling lines in the Solar System is right now in the process of being broken up," returned Peter.

"And I think we have the honor of arresting you, Mr. Bullock," cut in a new voice, "For contraband smuggling of jewels onto the planet earth!"

They turned. A lithe young fellow, clad in a silvery metalline uniform, with the *Rocket and Shooting-Star* insignia on his collar, stood behind Bullock, a tight little grin on his firm lips. "Hello, there, Peter," he greeted the secret service agent. "I see you got everything down pat."

Jim Bullock snorted contemptuously.

"So you think you got something on me?" he cried. "Bah! I just happened to be here."

"I suppose you just happened to be down there when they were bringing in the jewels," laughed Dalen Toggs, the young *Earth-Guard* captain.

"Despite circumstantial evidence," protested Jim Bullock, "you haven't got a thing on me. You'll find that I haven't made a single shipment of jewels from Io. The one you'll have to arrest is Dr. Teston, who seems to have disappeared. You couldn't hold me on such a foolish assumption, young man."

Captain Toggs frowned. Bullock was right. None of the smuggled goods, supposedly mined on Io, had been sent under Bullock's name. Toggs knew that Bullock had covered himself up very cleverly. Peter sighed.

"We'll not arrest you for that," he said. "We're going to arrest you for the murder of one Jim Bullock!"

Suddenly Bullock started. He leaped aside; to find himself staring straight into a gun held by Captain Toggs, who didn't know what it was all about, but was anxious to keep Bullock prisoner. "Just that," Peter was saying. "Along with the murders of Dr. Teston, Carewe, Shapely and Gormly of the Space-Guard!"

Captain Toggs was staring without comprehension. Bullock was suddenly a cringed and broken man, a beast at bay.

"Look closely, Dalen," said Peter to the Captain. "Behind all that beard is someone you should know." Dalen started; stared at Bullock. "Yes, Kellor, you do look different behind all the camouflage. Different; but I saw it all, that morning I was alone watching you drill. There's a trapdoor from your front room I accidently found, and a skeleton in the pit below. Bullock's skeleton! The real Bullock!"

● Suddenly Captain Toggs' puzzled face cleared; he whistled.

"Bedad!" he cried. "Diamond Kellor! Kellor, the diamond thief!"

"Yes," said Peter. "He's the same one who escaped a year ago on earth. Things got too hot, so Kellor, the diamond thief, saw a better way to make a fortune than by stealing diamonds. He was a half-brother to Jim Bullock, the poor half-demented trader who had made a post on Io. He knew Bullock's way, his mannerisms. He grew a beard which would make him look passingly like Bullock, came here, did away with Bullock, and made arrangements to smuggle jewels in here, and ship them out as mined jewels.

"Then he shipped all the jewels through to earth, falsely using Dr. Teston's name, though I don't know how he did away with the scientist."

"Oh, father died a natural death!" cried Doreen, who had appeared at the doorway. "Though he was duped by that scoundrel you call Kellor. Kellor insinuated himself into daddy's confidence, because he wanted me at first, and later because he became interested in the synthetic men! He was always talking about getting enough together to take to some planetoid, to conquer it! Outside our knowledge, he must have shipped the jewels to the world under our name. Then three months ago daddy died from fever. I tried to get in touch with the world; to go back, but Kellor wanted me. He's tried to attack me, but I always held him off. The other day I saw the freighter space-ship come in and I went down to the post to catch it, but I was too late."

"Then that accounts for your presence at the trading post that night!" cried Peter.

"Yes. Kellor knew I was around, and I had caught a glimpse of you. I came that night to try to get in touch with you. But he seized me and we struggled. He tore off my sweater, and I jerked from him and managed to flee. He followed me far up the river, and then returned."

"Yes," said Peter. "He set *Gansha*, a synthetic man, to kill me that night, but when he saw I was getting the best of it, he came in and pretended to save me."

Diamond Kellor, his glittering eyes darting to left and right, had been silent for some time. Captain Toggs kept his pistol trained upon him. Suddenly, a gigantic body leaped upon him from behind, bearing him to the ground. One of the giant synthetic men, who had been ignored because of their impassivity, had leaped upon Toggs. Behind him came others, their ghastly faces raging, distended nose-holes flaring.

"Men!" shouted Captain Toggs. "Shoot them down! Shoot them down!"

Kellor, who had been ignored, had sent the impulse to kill into the dull creatures' receptive brains. In a horde they poured upon Captain Toggs. Kellor leaped for the doorway, but Peter had hurled himself upon the criminal, dragging him to the ground. They struggled swiftly.

"Men!" Toggs was crying. "Shoot! Blow them up!"

From the direction of the space-ships, silvery *Earth-Guards* were running.

"No!" cried Doreen. "Don't shoot the poor things!"

And a moment later the synthetic men were getting to their feet calmly, retreating. They left a very disgruntled young space officer on the ground. He picked himself up grumpily.

"You see," said Doreen. "They are to be pitied, for they act to any strong telepathic wish. Kellor ordered them to attack; and I, who know them better and have more command over their poor simple minds, ordered them to retreat."

"Umph!" said Toggs grumpily, but he did not order his men to fire. Instead, he turned interestedly to watch the battle. Peter had crowded his man up against the wall and was hammering him senseless. He struck hard cruel blows into the man's body.

● Finally Kellor slumped, unconscious, to the ground. Peter turned, panting heavily. He licked the blood from bruised knuckles, but a light of joy shone in his eyes.

"There," he said. "That's just a little of what I'd like to express for Carewe, Shapely and Gormly. God knows how they all died, though perhaps by similar ruses to the one he tried on me."

A lieutenant hurried up and saluted Captain Toggs.

"Everything's as ordered, sir!" he said. "We captured all the crew of the smuggler—all we didn't kill! Captives are all on board, as are the contraband jewels they were carrying."

"Fine," said Toggs. "We can leave now. Some salvage ship will have to be sent back for the remains of that other space-ship. Come on, Peter, and you too, Miss Teston. How about pulling out of here?"

"I can be ready in a half-hour!" cried Doreen, her eyes shining eagerly.

"I'm ready now," said Peter. "But how about these—synthetic men! What're we going to do with them?"

"Oh, leave them here," cried Doreen impulsively. "The poor creatures are harmless. They would just live off wild fruits and berries, and since they can't reproduce, they will just die off anyway."

"Well, all right," said Toggs. "They're just beasts and couldn't be incriminated as accomplices anyway."

"And don't forget the fresh batch Kellor turned off last night in his lead-clothing," cried Peter. "Let's loose them, for Heaven's sake. They give me the jimjams shoving up from their tombs."

"Oh, did he make more?" cried Doreen. "He came and tied me up last night. I thought I heard noises in the lab."

Peter grinned, thinking of what had occurred last night.

"You certainly did, Miss Teston! I broke into the lab and radio-phoned for this *Earth-Guard* ship!"

"As soon as we get time," said Doreen, her eyes shining, "I want you to tell me every little thing that happened to you."

It was two hours later before Peter got a chance. The space-ship was clipping out into the void, and they were staring out through a rear porthole at a tiny pink-green moon which was rapidly diminishing in the distance.

The little moon, the stage of such an exciting episode, was being left again, a plaything to the elements, devoid of all human life. Before they left, Captain Toggs had dropped a neat little bomb egg smack into the center of the laboratory. The synthetic men, who had been ordered into the jungle, stared upward with listless eyes which could not understand. The god-like creatures so far above them, men, were leaving in a vast metal-sheathed chariot which sped through space. They could never understand. Other than an instinctive desire to eat, which drove them to pluck fruit, they had no emotions. Life to them was nothing much better than a dull void.

Doreen sighed.

"A cruel little world. Ten years it's been a prison to me. It killed my mother. I think my father must have been a little bit demented."

She shuddered. Peter felt a wave of sympathy for the girl, so long shut off from civilization. She was different, he was thinking, so fresh, and uncontaminated. What would she think of the other world, that civilized, inhabited world which beneath its surface was just as wild and savage as the jungles of Io. This beautiful, unsophisticated girl. She was so different!

● Different! Beautiful! Suddenly Peter recognized the symptoms. He blushed as the girl turned to him and clasped his arm for sympathy, staring up at him unafraid.

"Peter," she whispered. "You're swell!"

THE END

KEEP UP TO THE MINUTE IN SCIENCE

● THE LATEST scientific discoveries in astronomy, physics, chemistry, biology and other sciences are reviewed in the monthly pages of

Everyday Science and Mechanics

February issue now on all Newsstands

THE SHOT FROM THE SKY

(A Short SHORT Story)

By BENSON HERBERT

● We present this short tale as a burlesk on stories of space-travel. We know you will thoroughly enjoy it, for it has the O. Henry type of surprise ending.

● The people of Lancashire are said to be unusually placid, and their charming drawn-out dialect is pointed out as one instance of this. Their placidity was certainly violently disturbed one Saturday night in late June.

Horwich, a little Lancashire town, possesses one or two cotton mills, a factory where they make iron pipes, and a large railway works; but its chief fame is Rivington Pike, a small but abrupt mountain topped by an old beacon-tower. The way to the pike from the electric tram terminus is at first a broad road leading past Rivington Park, and at the side of this road there is much open space covered with grass. It is not indeed very far from the girls' high school. And it was here, by the greatest good fortune, that the thing fell.

At the time, there was a number of people coming down the road from Lord Leverhulme's grounds and the pike, and an electric tram had just swung around the sharp corner by the Crown Hotel. It was full of people coming from the cinemas in Bolton. The tram, as always, stopped with a violent jerk at the terminus, and the first passenger was about to jump off. It was just then that the thing happened.

There was a shrill whining overhead in the cloudless sky, a whisper at first which grew till it was deafening. For a second, a huge circular mass hung over the town, blocking out the setting sun, and then with a crash like thunder, it fell to the ground.

The man who had jumped out of the tram promptly sprang back again. Some of the people who were coming down from the pike were flung on their faces by a tremendous gust of wind. The others fled, screaming and shouting. Most of them apparently thought (as much as anyone could think in all the confusion and excitement) that the thing was some kind of bomb or shell dropped from an aeroplane.

After two or three minutes, when it was evident that nothing was going to explode, some of the braver ventured up the roadway to take a look at the thing.

There was, I am told, a slight depression in the ground where it lay, and it was round and very big. It was glowing red-hot and there was a ring of flames around it where the grass had caught fire. The first comers, greatly daring, ran up and stamped them out, but they could not approach the thing itself owing to the heat.

Shortly afterwards arrived the entire population of Horwich, and ten minutes later, six policemen. The crowd was in a state of nervous excitement and the policemen had a little trouble keeping them a safe distance from the missile.

Curiously enough, no one appears to have made any guesses or suggestions as to its nature. They were too much taken up with the thing itself to bother about that. All this time, you know, nothing whatever had happened to the object. It remained perfectly still and continued to glow red. Then, annoyingly, the sun set

(Illustration by Paul)

With a crash like thunder, it fell to the ground.

and darkness descended. After a time, as nothing further occurred, the excitement died down and the crowd gradually disappeared. Soon only three policemen were left, and one or two loafers.

But the telephones were busy. By midnight, a dozen motor-cars had arrived, bringing various lecturers and scientific men from the universities of Manchester, Birmingham, and Liverpool.

They were all intensely curious and a little sceptical. They had a good look at the thing—it was only faintly glowing by now—and heard several eye-witness accounts of its plunge from the sky.

"Well," said Mr. Flaxenby of Birmingham, jerkily and nervously, "I think that it is obvious to everyone that this is a visitor from another planet."

Most of them nodded in agreement.

"At any rate," said a teacher from Bolton with cautious principles, "it is certainly artificial."

"And I think we may take it," continued Flaxenby, "that as soon as the outer covering cools, the creatures inside will open some door or other and emerge."

"And then," said Williams, warming, "we will see beings from another world! Good God! You know, they might be—*strange*."

"Undoubtedly," replied Flaxenby. "Have you ever seen anything so unearthly as that vessel or shell, whatever it is?"

"I suppose they must have several layers of insulation inside the covering to keep out the heat caused by the air-friction. And, of course, they'll have a system of springs to lessen the shock on landing."

(It never occurred to anyone that the visitors from space might have been killed by the landing.)

"And when they come out—how shall we receive them?

"Their intellects must be far above ours; and their bodies . . . . they might be horribly repulsive."

"Heavens!" said Jacks, a man of some imagination. "You know, Wells and all

that—'The War of the Worlds.' Supposing— When they come out, what if they attack us with some ray or other? Goodness knows what they might not do. This may be just the advance-guard, so to speak—"

● The others began to realize the possibilities. A note of alarm crept into the group.

"Shouldn't we be prepared?" ventured Williams.

Flaxenby took in a deep breath.

"Decidedly, it would be better. Some trenches around them, perhaps, and guns to shell them—just in case. What do you think?"

"It's advisable, without a doubt."

"But what if they see our weapons, and —*misunderstand!*"

"We'll just have to risk that," exclaimed Jacks. "Man, we can't afford to be taken unawares."

Thoroughly alarmed, the group dispersed and hastened preparations. Before the night was half gone, deep trenches had been dug in circles, barbed-wire entanglements had been fixed, and a number of armed policemen were waiting on guard. It looked as if a miniature war were in operation.

Just before dawn, Flaxenby came quietly up to the silent guard and asked if anything had happened.

There came an awed whisper.

"Frankly, sir, it was as much as I could do to keep myself here. Through the night I saw something come out of the thing and glide slowly away. I was scared stiff. With there being no moon, I could just barely make it out. Then it seemed to come upon the barbed wire, an' we heard a most awful noise. *Gabbling*. It made me turn cold. Then a few minutes later I saw it go back into the thing again. Lord! I was relieved."

"What was it like?"

"Well, I couldn't see it, hardly, you see, it was so dark, but it was like nothing I've ever seen before. An' it had a horrible way of gliding.

"I tell you, sir, I felt thankful it wasn't lighter so that I could see it properly. What I did see was horrible enough."

Flaxenby waited impatiently for the dawn. The creatures would certainly emerge again, he thought, when the light came.

Jacks and Williams came up behind and joined him, and shortly the others arrived in twos and threes. There were whispered consultations and eager discussions. The policemen remained grimly silent, peering into the gloom within the circle.

The east slowly lightened. Objects took on an unreal, eery quality. Williams grew uneasy and restless, Flaxenby impatient.

The sky reddened, and everything began to emerge from the dusk. Long shadows appeared. In half a minute, it was light enough to see clearly. Plainly excited, the group moved forward to the edge of the circle.

What wonder of nature was about to appear before their eyes? What marvelous creatures from Venus or Mars? What superlative intellects? What unearthly wisdom?

● What was the secret of the missile from the heavens?

They paused in astonishment.

Two men were standing at the side of the vessel. One was fat, and completely bald, and the other had a distinct cast in his left eye. They were looking around with some amazement.

"Good morning," said the bald one suddenly, stepping forward, "can you tell us where we are? We're Fletcher and Johnson, of New York. We left there secretly yesterday morning in our new rocket aeroplane. We claim a record crossing of the Atlantic . . . ."

THE END

(Illustration by Paul)

She gave it the fire of both her guns.

THE EXILE OF THE SKIES

By RICHARD VAUGHAN

PART TWO

WHAT HAS GONE BEFORE:

● The greatest scientific mind in the world, Knute Savary, who has given to the civilization of the twenty-third century most of its wonderful inventions and discoveries that it enjoys, suddenly decides to try to gain control of the government of the world for unknown reasons. He destroys Chicago as a lesson to the peoples of earth to let them know that he is invulnerable. He is betrayed, and his plans are destroyed. The World Council decides that he has given the world too much, and that he has too great an intellect to be sentenced to death for this greatest of all crimes. Their final decision is to exile him into space in his own space-ship, which was a century ahead of all others in design, and which was equipped with "repellum," also his own discovery, which made the earth repel the ship the instant that it became activated, and would never allow the ship to land on earth again, although it might find a planet whose constituents had no effect on repellum. The vessel is filled with all the necessities and luxuries to last Knute for a century. Just before he is exiled into the skies, Knute says that Earth is doomed, but does not mention the reason why such should be the case.

One day his ship approaches an asteroid, upon which he lands, to find evidences of a dead race below the surface in great caverns. He hears a scream and rescues a girl when he returns to the surface, from some invisible horror. The girl had stowed away on his vessel, the *Victory*, and only came out after they had landed on Speira, the asteroid. She had betrayed Knute to the World Council, as she thought, for the world's own good. She had worked in his laboratory and had a very great mind for a woman. She was in love with Knute and followed him into exile. Knute is glad to have a scientific companion, but wishes it had been a man. Together, they peruse the records of the dead race of Speira, and learn that, in secret recesses, there are some inhabitants in suspended animation, that were put in that state when Speira had lost its atmosphere into space. Knute plans to bring Speira's atmosphere back and later try to return to earth to save it from the same fate, which was fast approaching. Knute and Nadja, the girl, destroy the planetoid of the invisible creatures who had threatened their lives. Approaching another asteroid, they are drawn below the surface by the race of bird-men that live below, under the crust, where they had taken refuge when the surface lost its atmosphere. One of the bird-men, who are far ahead of us in scientific development, joins Knute and Nadja when they return to Speira to set up the solar-generators which will restore its atmosphere, and they take along many robots to aid in the construction of these monstrous affairs. Under the forceful cosmic rays of space, the acute mechanisms of the mechanical men are actuated and somehow endowed with life of the most elementary sort. They take the space-ship from Speira, but the telepathic efforts of the three powerful minds of the bird-man, Knute, and Nadja overcome the simple intellect of the robots, and they command the ship to be brought back to Speira, which is done. They decide to take no more chances, and the robots are destroyed.

The three adventurers, awaiting the solar-generators to store the energy they will need to accomplish their huge task, decide to visit two of the other important asteroids, Marinoe and Reinos. *Now go on with the story.*

● We are now in the midst of a great complex tale. There are several things that we would like to know, and several mysteries to solve.

In this instalment we are first taken to the mysterious planetoids of Marinoe and Reinos. However, our greatest concern is whether it is possible to remake Speira —a dead, airless world—into the beautiful planet of its youth. And will Savary be able to bring the sleeping youth of the planetoid out of their state of suspended animation in which they have been for untold ages? If this can be accomplished, it may also be possible to save the earth from the fate that befalls all worlds.

If you have read the first part of this serial, we need not emphasize the merits of this tale, and you can expect this instalment—as well as the conclusion—to keep you as thoroughly interested as Part One.

CHAPTER IX

More Land for Marinoe

● "A younger planet than any of the others," Savary said on a note of interest as he bent over the vision plate. Beneath them floated a pleasant world of dancing waters, infinitely agreeable to the eye after the dead worlds they had known for so long. Nadja's eyes were sparkling as she turned from reading the atmosphere indicator.

"Air!" she cried. "Air, like on earth!"

They were sinking down between shredded banks of clouds that filtered the sunlight onto the tossing waves below. Flying close to the surface of the sea or ocean by means of their, till now unused, gliding-fins, they searched for land, but only narrow islets, mere reefs lifting above the surrounding waters, greeted their eyes. Nadja spoke regretfully.

"It is probably uninhabited: a small world just entering the sea-enfolded era Earth knew when life was still in embryo."

Telzon thought a negative.

"There are beings that can think here. I have been feeling the commotion of their thoughts since first we began flying over their sea. Look. There is an island big enough to hold the *Victory*. Let us descend there. I would see vegetation growing freely under the sun as once it did on Lydda."

They sank downward. Blue waters, gay as those on Earth, danced under their gliding shadow. On the islands towards which they aimed, green rushes waved lightly in a half-gale. Tears came to the terrestrial girl's eyes at the sight of this bright new world. The *Victory* settled with a crash and they hastened out eagerly to taste of the fresh, oxygenated air moist with the spray of dancing water. Nadja stooped and splashed her hands deep into the sparkling waves that dashed themselves against the shelving beach, while Telzon looked around him curiously at a sight to which those of his race had been strangers for many thousands of years. Stepping apart from the others, Savary let his glance wander in curiosity over the world of sunlit waters and cloud-dotted sky that surrounded them. Once more the insoluble problem of the vast cosmos assailed his mind. How, he asked himself, did this young planet come to form part of the dead system that surrounded it? If the asteroids were débris of some disrupted, greater world as many still maintained on Earth, would not the blasted portions of its original whole possess an identical planetary age? If, instead, they were individually conceived and Lilliputian offspring of the sun, how could one explain the æons of interval in their material evolution that existed between neighbors so near in interplanetary space? Speira, Sakka, and Lydda were old; were sere and devastated worlds. Here was a planetoid as young as Earth had been when she lay productive and pulsing with the fertility of a vast elemental laboratory in the arms of the first of all her seas. The very air he breathed was of a richness unknown on the aging Earth. If he analyzed the leaping waters at his feet, he knew that he would find them heavy with soluble minerals that on his own world had long since resolved themselves into their constituent parts. What he was looking at with kindling eyes was, he knew, a replica of the ocean-cradle from which the first finny ancestors of all terrestrial life had emerged at some milestone in the vast abyss of the past.

Breathing deeply of the vital air, he wondered what forms of budding existence, what forerunners of future living species, were even now following the infinitely slow and imperceptible paths of evolution beneath those laughing waves. As though in answer, a call from Nadja drew his attention. She was standing on a rock facing the shoreless sea, her face flushed with the caress of the breeze and her hair flying lose in warm, bronze curls, looking for the moment like the young and glowing Russian girl he had first taken into his laboratories. Her hand was extended towards the sea and his own

flew quickly towards his disintegrator as he followed it with his glance.

On the incoming billows, a strange apparition was moving towards them. When still some distance off, it halted, riding the waves as though they were its natural habitat and seemed to be sending them some message which neither Nadja nor Savary could understand. Telzon, however, with his mind trained in the immediate deciphering of the language of any thought, turned to his friends after a moment and said: "He asks us if we are friendly to his people. I have assured him that we are. He says he and others have watched us since first our shadow struck their waters; that our ship has given them a great fright. He wants to know what kind of beings we are. Our shapes are a little like theirs, but we are like nothing they have ever seen before."

As he spoke, the being seemed to lose some of its fear. Walking, or rather waddling, on webbed and only partly bifurcated lower limbs, it emerged from the backwash of the waves and considered them. Their fascinated gaze saw that its body was covered with the close scales of a fish, though its face and arms possessed a sort of glistening skin like that of a dolphin or shark. Its face was round and gentle and reminded Nadja of that of a seal, while there was some vague resemblance to the seal as well as to the frog in the shape of its body. Its arms were frog-like, long and subtle and prehensile, while its body narrowed to the torpedo lines of the seal, its lower limbs being merely a development of what might once have been a tail.

"Could I exchange thoughts with it?" Savary asked impatiently, for the need of an interpreter irked him. Telzon shook his head.

"No. His mind is incapable of adapting itself to pure thought transference, and you are not old enough in the science to adapt your mental waves to an unknown tongue without a previous study of that tongue. With us it is child's play."

"What does it call itself?"

"A 'Finnuis,' he says. They are the ruling race on this asteroid, equipped evidently to live either under or above the water. He is calling others of his kind now. He feels we are friendly. I have asked him if all his people live in the water, and he says that they have to, that all this world lies under the seas save for some small islands, but that millions of years ago his people dwelt on land and were happier than they are now. One day the land they lived on disappeared under the waves, and they had to return to the amphibian habits their ancestors had possessed. There are legends, he says, about that distant time, but for thousands of years now, his people have been a marine race."

Nadja was highly interested. "Look!" she said, "He has gills on each side of his throat like a fish, as well as nostrils."

● As she spoke, a score or so of Finnuis or fish-men appeared on the farther billows, and two of the more daring among them waddled out of the milky wash to join the first, casting frightened looks at the great space-ship as they did so. Later it was learned that they had taken it for some gigantic shell. Telzon carried on an animated exchange of thoughts with them, translating the results as fast as he could to the two others.

"We have indeed come to a young world," he said. "This first Finnuis is a chief among his people; an intelligent savage. That they can talk through thought interchange is due to the fact that they possess no vocal language, which under water would be of little use to them. He tells me that the seas teem with thousands of forms of varied life but that his is the dominant one. By what he says, they are in full process of evolution. The lowest types of his race are still barely capable of existing out of water, while tribes like his own can only endure submarine life a certain number of hours. They are descendants, he says, of the Finnuis who had already achieved life on dry land before the second submersion. He is asking me if we are gods, and if so, if we will be their friends. They need help in the fight

they are always waging against the ferocious denizens of their seas. They ask if we are powerful enough to bring back the land that the sea has swallowed, so that they may live once more away from their ocean enemies."

"Tell them that we are not gods," Savary said, "only beings who have attained a higher and older evolutionary stage than themselves, but that we wish to be friends, that we may even perhaps find some way of uncovering some of their submerged lands so that they may return to a life on the surface. Ask them what other forms of life are the next strongest here."

"Great shark-like creatures and gelatinous animals, seemingly of a low evolutionary order, but almost impossible to kill, he says, and deadly to the Finnuis, are their chief enemies. There are many other kinds of giant and rapacious fish, too, and some great clams that could devour even beings of our size at one gulp. Apparently, the whole sea swarms with life, pugnacious, voracious life, against which they must constantly struggle. They live in caves under these rare, small islets, to which they flee when danger is too great."

"Have they larger islands than this?" Savary asked.

Telzon questioned them and the Finnuis clearly indicated that they had. It was there, they explained, that their wisest men and leaders lived. The chiefs who still treasured some of the knowledge which, it was alleged, their ancestors had brought with them from their existence on land, thousands of years before. Savary told Telzon to invite a few of them to enter the space-ship and show them where these islands were, but when the old Lyddan interpreted the invitation, a rustle of terror ran through the assembled fish-men. Half of them dived into the waves and disappeared, but their leader and seven or eight others stood firm. Their small brilliant eyes grew distended and the breath whistled through their nostrils, but they bowed their heads in assent. Clearly, despite denials, they still believed that their visitors were gods. Nadja admired their valor as they clambered painfully into the *Victory*. They could hardly manage the steps and needed considerable assistance, but their quivering courage held firm. Telzon warned them what to expect and explained that the ship they were on had come from one of the stars (there was no means of putting it more clearly) that illumined their sky at night.

"They are valiant savages," Savary said, "something more than that. That chief of theirs is a brave fellow. Can you imagine a primitive South-Sea Islander entering a ship like this at the behest of strange beings from another world?"

Nadja fastened the outer doors, and then asked: "Do you think it would be possible to lower their sea level as they would like?"

"It should be no harder than some of the things we have already achieved. I must think it over. If we did, evolution on this planetoid would take a thousand-year stride in one generation. In any case, this is an interesting little world . . . . worth investigating."

Telzon had opened the rocket throttles while they spoke. As the space-vessel hurled itself upward, the Finnuis flung themselves upon the floor of the control room in agonies of terror which the Lyddan had great trouble in dissipating. After a while, however, the leader recovered composure enough to creep to the vision-plate and give some fumbling directions as to the course the ship should take; though the sight of the panorama of his world slipping below him at an amazing speed almost unmanned him once more. The distances on the small planetoid were short, and an hour's flying (at low speed, since the velocities used in space would have been dangerous in atmosphere because of the heat-generating friction) brought the *Victory* over the emplacement of a group of islands of more dignified proportions than they had yet seen. Savary, who had disappeared into his laboratory, now emerged and pointed out to Nadja the resemblance between their formation and that of the clusters of coral islands on Earth. Many of them were

joined together by narrow reefs, and the Finnuis' leader explained that it was because of this that these islets had been chosen as the chief settlement of their people, since the fearsome foes of their race could not enter the lagoons formed by the interlacing shoals. Indicating one of the central islands with one finned arm, he told Telzon that there was a level space of ground there large enough for the *Victory* to alight upon. As soon as the door of the space-ship was opened, the other fish-men with him flopped frantically out into the fresh air that they thought they had abandoned forever. Nadja, following them, saw the whole surface of the nearer lagoons covered with excited Finnuis who were threshing the blue wavelets to foam as they surged towards land. Savary turned towards Telzon, who had seated himself on a rugged outcropping of rock close to the water's edge and was listening interestedly to the cross currents of thought beating and eddying all around them.

"Tell them that we believe we can push the sea back from their shores so as to give them more land," he said decisively, and Nadja knew that in the brief time of their flight, he had worked out the equations of this new problem.

A Stupendous Offer

● By now a half-dozen fish-men . . . . evidently chiefs among the tribes . . . . had emerged from the breakers and were panting up the slope towards them on their clumsy flipper-like feet. Telzon rose and bowed to them.

"These are the head men of the leading and most advanced tribe," he said. "Our own chief is telling them that we come from the stars and that we have offered to turn their islets into a whole continent of dry earth on which they may re-establish the terra-firma life of their ancestors. The oldest fish-man says . . . . in answer to my questions . . . . that these islands are the summit of a mountain range, and that, for many miles around, the ground has tilted up so that the waters are comparatively shallow. If the ocean could be lowered twenty feet, a vast area would be uncovered. He says that he cannot conceive of forces capable of removing the water and letting the land re-emerge once more as it did in the past, but that he offers the complete allegiance of his people to any being who could do so wonderful a thing."

Savary smiled. "It will be simpler than I thought at first . . . . but it will be no child's undertaking. Evaporating the water would be easy with our heat rays, but that would not solve the problem. It would only condense into clouds and return in the form of rain almost immediately. The only way is to hurl part of the ocean out into space, or find some force to raise the level of the land. The first seems the simplest, since we do not possess control over the inner forces of the crust. Tell them that it will take us about a week or ten days to make the necessary preparations. Nadja and I can do most of the work while you learn all you can about these strange beings and the history of their world."

Once his message was given, he disappeared within the space-ship with a sign to Nadja to follow him. Telzon remained without, letting his old eyes drink their fill of the spectacle of waters and sun and clouds against azure skies that had been unknown to his race for so many thousands of years. The Finnuis' ancients came out on the beach to exchange their thoughts with him, and on a roll of delicate indestructible metal, he inscribed as much as he could of what they told him. That evening he read it aloud to Nadja and Savary as they rested over their meal in the pleasantly lit interior of the control room.

Dusk had come to the sea-wrapped planetoid. The Finnuis had retired to their caves beneath the various islands, except for the messages sent out to every other known colony of fish-men throughout Marinoe. A rising wind lashed the slaty waters without to a deep-voiced chorus. In a cloudless sky, stars were shining with the almost forgotten softness of a terrestrial night.

Savary and Nadja had just come in from a swim in the briny coolness of one of the reef-sheltered lagoons. The girl thought that never had she known such intense, unadulterated pleasure as that plunge into those sweetly acrid waters and the smooth lift and fall of the sleepy waves under her while the stars came out in the light-drained sky above. Even Savary had shed for a moment the encasing armor of his demiurgian meditations to become a laughing playmate whose muscles gloried primitively in conquering the foaming thunder of the breakers. Now they rested, wearied by the work they had done in the laboratory all day, and by the happy physical glow they had brought back from their swim. Meanwhile, Telzon thought out to them the tale of sea-wrapped Marinoe.

Putting together those things which the Finnuis had told him and reading more into their tales of misty legends and half-forgotten traditions than the fish-men's still-primitive minds could achieve, the subtle and trained mind of the Lyddan sage had managed a fairly comprehensible reconstruction of the history of this new little world. Marinoe had evidently seen an evolution of life that paralleled in its major lines that of biological existence on Earth. From primitive unicellular forms of minute life, the chain of living organisms had followed its slow upward course out of the abyss of time, till the receding seas had brought that first and greatest of all of life's pioneering forms, the land-going fish. It was here that the processes of evolution had apparently diverged somewhat from those known and accepted in the theories of the distant Earth.

Marinoe, because of its lesser gravity, was favorable to a more rapid development of life-forms of large size. The first fish forms to emerge and adapt themselves, at least partially, to life on dry land had been probably of a size nearly equal to that of the present fish-men, and the safety they had won by leaving the teeming seas for a less crowded element had favored a very rapid development of their brains. The smallness of the areas surrendered by the sea, however, had prevented their race from ever becoming wholly land-dwellers in the sense that the descendants of the ancient saurians of Earth had become. They had remained amphibians, more akin to bactricians than to any other form of terrestrial life. Their gills, however, had already shown signs of atrophying amongst the more civilized tribes, when a great seismic catastrophe had rent their world, destroying nearly all life on its surface, and submerging the whole planetoid beneath the waves. The few survivors of this convulsion had managed to re-adapt themselves, through necessity, to the purely marine life that was imposed upon them. As generation succeeded generation, they were saved from returning completely to fish by the traditions of a wiser and better time that were handed down among them from chief to chief. They had carried their tribal methods beneath the waves with them and this probably favored their existence, but their life was, nevertheless, a precarious one, aided only by the increasingly numerous emergings of small reefs and islets from the teeming waters around them on which they could take refuge from their foes. They had developed certain arts, such as thought-transference which their underwater life rendered necessary, and the making of weapons from shells and stone. Out of the torpedo-shaped shells of some of their foes they had also made small boats, invulnerable to the attacks of even the sharpest-toothed of their enemies, in which they propelled themselves from one colony of their race to another. These boats, however, were very rare and were used only by chieftains and messengers. The masses of the Finnuis lived a life of constant and pressing danger which had developed in them a high order of initiative and courage. Savary and Nadja were to find them on closer acquaintance a race of valorous and hardy savages, the dexterity of whose minds had been trained by the hazards of their existence to a keenness far beyond the levels of the small store of knowledge and civilization they possessed. The seeds of a great evolutionary

growth were in them ready to germinate when given the slightest of favorable circumstances. Only the grim struggle for survival which they constantly waged, had held them back.

● "There is a vague tale among the wiser of their chiefs which relates that Marinoe was once twice as large as it is now," Telzon said. "All the half of her that was land was torn away, legend relates, and hurled into the sky, and the seas that covered the other half poured over the wound that was made and covered it. Only the Finnuis colonies that inhabitated small islands on the farther side from the cataclysm survived, and some of the brighter among them wrote down story pictures of the horrors of that time on the stone walls of their caverns. One of the old chiefs showed me in his thoughts a picture of the sea-bed from which the continents of Marinoe were supposed to have been cleft. It is an immensely deep, seamed, and tortured terrain, showing signs of a much newer geological formation than elsewhere. I wonder if neighboring Reinos might not be the other half of this disrupted planet?"

"That would explain the comparative youth of Marinoe," Savary said. "If a planet thus torn asunder did not fuse itself completely back into its elementary molten condition, it would at least return some odd million years backward along its life course. I think . . . . don't you Nadja? . . . . that the Finnuis are a valiant and vigorous race, and that they deserve to have the hand of time advanced for them across a few thousand years. Given dry land sufficient for their safety and development now, they can recover in a very few generations the ground that they have lost in the thousands of years since the catastrophe . . . . whatever it was . . . . that hurled them back into the sea."

The old Lyddan leaned forward, the feathers on his bony skull ruffling with doubt.

"But can you do it? It would be easy to evaporate enough water to reduce the sea-level . . . . but that would be useless since it would return. How can you remove the water from this world so that it cannot precipitate?"

"We will use a neutron-stream and hurl it into space as we did the robots," Savary said calmly.

The next morning, Savary rose with the red hush of a pleasant, Earth-like dawn. Stepping out of the space-ship, he drew the keen, acrid air deep into his lungs and felt a new vigor flow through his veins. The saffron and silver bosom of the planetoid's sea rose and fell in slow surges under the flush of a crimsoning sky. Looking up at the clouds that were already flushing with the coming of the sun, he wondered at the manner in which he . . . . and all humanity . . . . had taken for granted the fairness and freshness of Earth's living days and nights. After bending over the tombs of dead planets, after treading nought but skeleton worlds, the beauty of the living, dawning morn around him seemed more miraculous than any of the feats his own scientific might had achieved.

With folded arms, he surveyed this budding world unfolding itself to the day. Marinoe was full of the pulsing promise of a manifold future. If Lydda and Speira could be returned to the realms of living worlds and the stored wisdom of their older races set to uses wider than mere planetary confines, what a nucleus of a vast and mighty empire they might prove to be! Within the complex convolutions of his mind, still-untapped reservoirs of energy seemed to stir as his thoughts flew to embrace uncharted Reinos and the spacial night beyond, where in their vast orbital stream, the multitude of other asteroids rolled; dead worlds and living perhaps, even as those he had seen, waiting on the immutable law of time for their triumphs or their deaths . . . . the immutable law against which he alone had flung the challenge of the organic mind.

He wondered if such a union of even a minor portion of the worlds encircling the sun might not mean an ultimate bending

of all nature itself to the power of human and kindred thought. The pooled resources and knowledge of such a realm would be beyond anything as yet conceived of. A name sprang into his mind . . . . a name half borrowed from the ancient history of his own North American state: The United States of the Asteroids. Nadja, coming from a brief swim in the delectable water to call him to the morning meal, found him staring across the sparkling sea with the still intensity of one who sees a vision that no other man has even seen before.

CHAPTER X

A New World

● Switching off the heat-ray that had been welding metal to metal within the workshop of the *Victory*, Nadja straightened and said with a sigh of relief: "The last piece."

Telzon deftly laid the shining section of stelumin away with its fellows in a rocket boat moored against the side of the space-ship.

"Have the Finnuis followed your instructions, Telzon?" Savary asked over one shoulder.

"Yes . . . . at dawn. They have evacuated the ocean bed and are gathered on every available islet and reef."

"Then, since we are ready, we might just as well start right away. See that the rocket-boat is well clamped on to the outside fin, Nadja, and close the outer doors."

He turned to the control-panel as soon as his orders had been obeyed, and the *Victory* shot upwards and passed like an immense shadow over the seas that had grown familiar to the sight in the last ten days. On the narrow reefs behind them, the tribes of the Finnuis crowded like swarming seals and shook and billowed in the tides of their excitement and worshipping terror. To them, the space-ship and its occupants were gods . . . . beneficent but always terrifying beings of awesome powers. Within the vessel, the chiefs of the fish-men clung tremulously to the bars along the walls as they were carried to the witnessing of a spectacle such as their savage minds had never even conceived of.

Savary had chosen a spot at one of the lesser depths of the ocean bed. He and Nadja had descended beneath the waves in a rocket-boat and carefully planed and grooved the ground in readiness for the small neutron-ray projector they had constructed. This was much less complicated than the larger editions built on Speira, since it would draw its motive power from the ship's engines and need no regulating apparatus or solar energy storage tanks. Nevertheless, the final erection of the delicate, yet mighty machinery, was too precise an affair to be carried on under water and had been left till the final moment.

Some time previous, Telzon had added a certain number of Lyddan force-beam projectors to the equipment of the *Victory*. Under Savary's directions, he had worked during the last ten days at adding to their number and at readjusting them so that they sent their powerful pulsations in a regular ring . . . . a ring without gap or weakness . . . . around the space-ship. Temporarily, they had replaced the heat-guns whose fans had encircled the vessel. Now, as he settled the *Victory* slowly into the long surges of the sea, Savary carefully switched on a circling row of these beams, adding others to their number as they sank lower till the full array was brought into action. Before the goggling eyes of the chiefs of the Finnuis, the strangest of spectacles occurred.

In a vast circle, the billows along the surface of the sea began bending and retreating on themselves till around the ship, a mounting wall of water was being pushed backwards under the carefully regulated power of the Lyddan beam. As the waters were pushed back on themselves, the *Victory* sank deeper into the opening gulf of the sea. The piling waters reared into an impotent wall whose crest reared and toppled over backwards and crowded the farther tides of the sea-girt asteroid into tidal bores that began to

move around the little world in a slow, at first, but ever quickening revulsion from the coercive might that was beating on them.

Bending over the vision-plate, Nadja and Telzon saw a vision of towering green walls rising each moment higher, till suddenly, they met with a roar above the space-ship's head. There the play of the force-beam's molecular pressure held them like a vast domed roof that surged and eddied upon itself, that gave a terrifying impression of appalling might just barely held in leash which sank down with the sinking motion of the ship, yet never touched it.

Within the space where the *Victory* moved, the light grew more and more corpuscular. Strange things of the innermost fertile deeps writhed in the grip of the massed water-walls at either side. The Finnuis, goggle-eyed and panting, were past coherent thought.

Savary sat in tense calculation over the control-board. Before the first of the tidal waves now hurtling across the little planet had reached the islands where the outposts of the fish-men clung in blind obedience to his will, his work must be done and the power that was to recall those onflowing walls of destruction be released, else the trusting Finnuis would pay with the lives of half their numbers for the boon they had asked of their visitors from the stars. A minute error might mean the loss of a thousand trusting lives.

Suddenly, the keel of the space-ship grated gently against the ocean bed. Nadja and Telzon, who were already waiting in space-suits at the outer door, swiftly flung it open and sprang out. There was no time to lose! Under the impulsion of their small force-beams and their heat-rays, pieces were assembled and welded at full speed, cables and conductors connected with the power plant of the ship itself, the whole ready mass of machinery made into a cohesive unit. Then the two swung back into the vessel where Savary waited, his eyes on his watch and his hands on the control levers in front of him.

"Four minutes to go," he said. "A close margin . . . . but we've made it."

His right hand flashed downward. On remote islands, the huddled Finnuis heard, at the same moment, a roar that sounded like the end of a world. Against the sky, a wall of water . . . . immense, black as night, and death-bearing . . . . was trampling the waves beneath its onslaught. The wind of its coming beat and wailed in demoniac fury before its path. Flying clouds of spray were set about its crest, higher than a moving mountain! It came bearing in upon them, a doom against which neither man nor fish could contend. Then, as they looked and cowered, its towering death seemed to halt, to stagger, to curl and bend back upon itself! In the whistling of winds such as they had never known, they saw all the sky become a panorama of tossing billows, each mountain high, born on the shoulders of that one great, awful wall, like clouds on a snow-reaching peak. Then . . . . like a living thing . . . . the tortured waters had turned and poured themselves back along the path they had come! The surface of the sea foamed and heaved and tossed, but only an infinitesimal backwash of the gigantic turmoil came up against the low-lying reefs where the fish-men cowered.

● As Savary's hand flashed down towards the levers before him, those on board the *Victory* saw an even more awesome sight. From the hastily mounted projector on the muddy sea bottom, the neutron-beam flashed palely forth, and simultaneously, the Lyddan molecular beam was withdrawn directly in front of it and the line of the upleaping spear of cosmic power was met by the headlong plunge of the fathoms of water pouring through the gap.

Savary had made this new ray considerably broader in its spread than those on Speira. Its force was adequate even to the terrible demands made of it. The Lyddan beam had held at bay all the massed pressure of the back-flung sea, but the neutron-ray did more. Thrusting the down-

plunging wall of water upward as though it had been a cascade of feathers, it hurled it forth, upward and onward in a gigantic column that reared ever higher above the surface of the seething ocean till it met and passed the clouds that milled in an angry turmoil on high. Into the outer airless spaces, it flung the unceasing downpour of churning, released ocean; past the atmospheric net that might otherwise have held it and returned it to the surface it had left. The empty places of the sea formed a funnel into which the outward-coursing tidal walls were sucked relentlessly back and down, so that they checked themselves in full advance as though at the pull of irresistible reins. In one straight, narrow jet, the ocean of Marinoe was being hurled into the void.

To those within the space-ship, nothing of the stupendous spectacle of the water's surface was visible. Held beneath the caverned walls of the back-bent seas, they saw the terrible rush and surge of churning tides bear down at them, then the upward leap of their foaming masses towards a remote surface. Around them, the sense of pressure, of struggling captive power, was tremendous and awe-inspiring. The green sea-walls seemed as solid as infinitely thick glass; while the neutron-stream became, upon meeting the onrush of waters, a fairy jet of delicate colors, spraying and widening under Savary's hand so as to encompass the whole width of the down-crashing column. The Finnuis, clustered about the windows of the observatory, pointed with shaking, fin-like hands at the vague shapes of enormous fish that writhed and struggled in the down-leaping waters being hurled outward into space. Telzon had considerable trouble in controlling their terror as the glassy walls of the back-bent seas on either hand dimly revealed the monstrous outlines of primitive forms of life as they feebly quivered in the terrible grip of the repulsed waves.

Nadja saw great ghostly shapes, half plant, half fish, glow in their death-throes behind that compressed wall of water. Now and again the bombardment of some vast body seemed to bend and partially repulse one of the force-beams, on which Savary's hand would dart from one lever to another giving the weakening beam additional force till the equilibrium was restored. There could be no slackening in his watchfulness. Just as an error of a few moments would have sent death charging on watery wings around the small circumference of Marinoe, so would an error now nullify the whole undertaking and perhaps destroy the *Victory* itself beneath the tons of water that would cavern it. The crux of his whole problem was timing . . . . timing and the accuracy of his calculations; calculations infinitely complex, wherein every possible element of the problem before him had been weighed and analyzed and allowed for. From the information gathered for him by the Finnuis and the soundings he had himself taken, he had calculated the cubic volume of the Marinoean seas and the time it would take to lower this volume sufficiently to allow the ocean to sink to the level he judged necessary for the emergence of a sufficiency of new land for the fish-men's needs. For six and one-quarter hours, he must stay at his post, watching for the variations in pressure that made the work of the Lyddan beams so delicate a matter. If a breach should be made through their repulsing rays, the space-ship . . . . inured as it was to the assaults of meteors . . . . might yet suffer severe enough injuries to render them captives of the ocean they were battling against.

Meanwhile, on the tormented surface of the sea, clouds and waves seemed to boil together in one common frenzy. The Finnuis huddled on their foam-spattered reefs under the bite of gales such as even their primordial world had rarely known. Within the space-ship, time seemed to move as slowly as a stream of molten lead, but at last it reached its goal. Knute Savary's hands flashed downward. The neutron-ray vanished and the missing force-beam swept back to its post above. Nadja and Telzon sprang out, waist deep in the seepage of the ocean floor, and hur-

riedly disconnected and dismantled the neutron-projector and loaded its pieces into the ship.Then, with infinitely slow care, the range of the Lyddan beam was shortened, inch by inch, till the caverned walls of the sea hovered barely six inches above the space-ship. Then they were switched off.

The ocean hurled itself in a titanic charge against the mighty bulk of the ship of interplanetary space. All within shuddered and swayed, but the rocket tubes were already at work. Flashing between green walls of water, the *Victory* streaked up towards the surface through foaming depths. Ten minutes later, the space-ship floated above the milling waves while the winds, disrupted from their usual currents, howled wildly around its arrogant bulk. Beneath it, the waters whirled in vast circles like a whirlpool as the seas poured from all over Marinoe to fill the gap blasted within their depths. Somewhere out in the airless void, the outflung waves of the asteroid's ocean had become icy pebbles of space.

After the Storm

● As the *Victory* skimmed over the tossing billows, their eyes looked out on a changed world. Long reefs lifted where no reefs had been before; seaweed-draped islets flung back the heavy battering of the surf that had covered them fathom-deep a few hours ago; and as they sped towards the tiny archipelago where the largest colony of the Finnuis had taken refuge during the turmoil that had disrupted their world, the sea-changed, barnacle-covered, green and slimy bones of a minor continent arose to view. Fully a hundred square miles of land had been released from the sea, and innumerable islands that had had no existence before now waited . . . . black and foam-fringed and darkly etched against the chaotic horizon . . . . to be claimed as a people's home.

The savage fish-men's leaders fell at Savary's feet. The thing he had accomplished was beyond their understanding. For them it was the miraculous work of gods. Land, the precious land of their dim legends, was restored to them. Generations stretched ahead of them before they would definitely leave the sea and lose their attributes of amphibian life, but a safe refuge for their harried tribes was now assured them, and freed of the shackles of continual strife, they would now be able to develop a civilization. For them the hand of time had been turned forward a thousand years.

When they were finally alone within the control-room of the space-ship, Nadja was laughing a little.

"Do you realize that a mythology is being born? Five hundred years from now you will have become their reigning deity."

Savary paused, arrested by a new thought.

"I wonder if something like this may not have been the source of some of our own mythologists?—those that cannot be explained by ancestor or hero worship. Visitors from more advanced planets may have come to the earth while our peoples were still primitive and left traces of their knowledge in the more ancient religions."

Telzon nodded. "Some of the dead worlds may have advanced to interplanetary travel before the airless doom cut their evolution short. If we find the sleepers of Speira, we may learn something of such things. Lydda, though equally old, never acquired, I know, any learning of spacial flights."

Two days later, the dead-black night of the airless void had swept them once more into its embrace. They sped out from the sea-wrapped world with their course laid on the last planet of the little group of asteroids. With minds refreshed by their contact with the youth and vigor of a young sphere till they seemed new people to themselves, they rested within the bright control-room, while through the minds of each swung the vast inexorable pageant of the life and death of worlds.

Nadja Manners, following in her thoughts the events . . . . impossibly vast and strange . . . . of the months since her grim departure from Earth, was sud-

denly conscious of the depths and breadth her mind had attained in its constant fellowship with cosmic space. Should she return to Earth now . . . . if such a thing were possible . . . . she would be as lonely among the little minds of men as Knute Savary had probably been in the past. The panorama of the worlds they had seen swept majestically before her mind's eye. Dead Speira and Lydda, seared skeletons of space, flung their grim challenge, their indictment of the immensities of cosmic waste, silently at the unmoved stars. Sakka spun before their eyes (Savary's thoughts had joined hers in their flight), an unsolved enigma that must remain forever unanswered. Grave of an unnamable race, a plague spot now doomed to eternal solitude in space, none would ever know whether it had been the tomb of a normal biological past repossessed after its death by the other dimensional horrors, or a world so new as to have spawned forms of life as yet unpredictable in a three-dimensional plane. Pleasantest of all planetoids, Marinoe swung greenly and vitally before their mind's eye, a world of brave beginnings, athrob with life, whose fairness of dancing waves and salt breezes recalled the distant Earth; Earth, that was green still from the memories of her ocean-rocked vital dawns, yet already condemned, already touched with the dread finger of planetary death, and from whose pleasant days and nights they were sundered by the imponderable abyss of cosmic space.

Within a short time, Reinos, last of the five sister planetoids, rose up like a dull silver disc across the field of the vision-plate. The ever impressive spectacle of the approach of a world held them bent over its changing view as the disc became moon-sized, then a swaying globe, argent and blue, that slowly filled the plate and grew and grew till the markings of its cloud-wrapped upper surface were clearly discernible. With the braking rockets hissing their song of flame, they entered the first atmospheric layer. Nadja took the usual tests. "Nearly the same atmosphere as Marinoe," she said.

Telzon ruffled his head feathers. "Another new world. Probably Marinoe's missing half. Lydda will seem a tomb to me now that I have seen how fair a young world can be. I think that I will find means of persuading our Older Ones to change their minds and shake off their inertia and accept your promise to bring back air to our planet if your experiment on Speira should prove a success. The air of Marinoe has made me a half-century younger. If this world is the same, we may draw another renewal of vitality from the very contact of her soil. It is reasonable to believe that youthful planets energize those which breathe their atmosphere and receive their radiations with a vitality unknown to those who tread only synthetic or dying soils."

Savary bent over the vision-plate. Beneath them, the roof of clouds rose ever closer, engulfing them at last in cool silver mists from which they emerged upon a world of sunless lush green vegetation, of silver rivers winding through dense forests, of tree-clad plateaus lifting from vast swamps. It was a steaming world of rising mists and tropical exuberance of growth at which Telzon cast one glance and said: "This world is smaller than Marinoe and has cooled quicker, though it was probably returned to a molten state by the cataclysm that tore it away from the other planet. There must certainly be life within these forests."

Nadja said drily: "It may not be pleasant life; neolithic, to say the least."

● Savary pointed the *Victory* towards a green plain, high perched on the shoulder of a mountain range whose apex was a smoking volcano. They sank to the ground and Nadja made another more careful analysis of the atmosphere and found it heavy and rich but containing only known gases and safe enough for their lungs. Telzon ventured to the doorway of the last air-lock and stood sniffing the air dubiously. Suddenly, he shook his head and refused to venture out.

"This world is too exuberant, too violent in its growth for me. There is some-

thing here I do not like; some danger I can feel but not yet analyze. Whatever minds live here send out emanations of no cerebral interpretation."

Savary thought this over. As Nadja refused to stay behind while he explored the new planetoid alone, he suggested that they wear space-suits and go fully armed as a precaution against possible dangers.

"We do not know what may lurk within those ferny jungles," he said. "We are receiving no thought waves from intelligent life forms as on Marinoe. Moreover, the type of vegetation is one that existed on Earth during paleontological days."

However, they decided that it was safe to leave their helmets open. As the air-lock closed behind them, Nadja was the first to fling its visor back and draw in a deep breath of the rich and heavy air. The stelumin door had clanged at their rear and they stood in a verdant world of long lush grasses, grasses half a man's height, while below them spread the liana-plaited crest of an immense forest. Strange sulphuric odors drifted down to them from the waving plume of the volcanic cone in the distance, and an immense sense of moisture and steaming, pulsing saturation beat up from the depths below their high-thrust plain.

Savary considered the scene and then spoke his thoughts. "We can explore in one of the rocket boats tomorrow. We had better not wander too far from the ship today. Let us go to the edge of the plateau and see what view we can get. It is only a five-minute walk."

Nadja sniffed curiously at the oddly scented air.

"I wouldn't like to have to breathe this continually," she said. "It's like the smell of . . . . what is it now? . . . . I know! A gigantic laboratory."

"In a way, that's what it is, I should think," Savary mused. "This air is surcharged with many chemical elements that have disappeared from the Earth . . . . at least in their free state . . . . save in the chemist's laboratory. Here they are still in solution. Our world must have been very much like this once after it emerged from the ocean stage of Marinoe, almost overpoweringly vital, volcanic and damp and . . . . populous. This world is probably teeming with life, though as Telzon says, it is most likely unintelligent life."

They went through the long grasses amid a swarm of small insects that rose in clouds around them. The ground was spongy under their feet. Above their heads, the purple cloud trailing from the distant volcano hovered like an eternal threat set over the land. After ten minutes' walk or so, they found themselves on the edge of the vast plateau upon which the *Victory* had come to rest. Beneath them, the ground plunged away in a sharp fall that ended in a sea of violently colored verdure many hundreds of feet below. From there, it undulated to lower and lower levels till the vague mists hovering over the swamps it sheltered hid the further view.

It was a sunless, lush and ominous panorama. Nadja shuddered.

"I wouldn't venture down there for anything," she said. "Telzon was right. There is a sense of danger permeating this scenery. I . . . ."

There was a cracking sound. Savary saw her sway for a brief moment against the verdure below, then she was gone . . . . whipped off her perch on the edge of the precipice by a long bluish tentacle that had shot out of the jungle hundreds of feet down and swept her with lightning speed under the impenetrable tent of jungle clothing it. Her scream . . . . hovering and rending the heavy air even after she had disappeared . . . . was all that remained of her in the steaming, overabundant world around him.

It was in that awful moment that Knute Savary woke to the realization of all that the slim Russian girl meant to him. As he shuddered there at the edge of the leafy abyss that had engulfed her, probably forever, he was no more the calm and lucid intellectual Titan that Nadja had known, but a man swept from his known footing into a world of intense horror, of emo-

tions so agonizingly wild and fierce that they served to measure for him the love he had never realized till this moment.

For a second . . . . like a wounded giant . . . . he rocked on his feet as he strove to lift his mind out of the battering waves of his emotions. Then shrilling a voiceless, frantic message to Telzon in the distant space-ship, he pulled his helmet shut, and using his rocket-tubes as brakes, hurled himself down after her into the still-vibrating foliage far below.

CHAPTER XI

Terrors of Reinos

● One thing only conspired to save the Earth-girl's life as she was dragged off the edge of the plateau into the violent verdure below. The immense tentacle that had seized her had wrapped itself around her in such a manner as to leave one arm partially free, and although she could not reach her guns, she managed . . . . with an instinctive movement bred of life in airless space . . . . to snap her helmet closed even as she was hurtling in a vast, sweeping plunge towards an invisible destruction.

The remarkable tensile strength of the material of the space-suit . . . . a strength that could resist the vacuum of space itself . . . . prevented the pressure of the tentacle holding her from affecting her freedom of movement within the suit itself or bruising her body. It had folded itself so closely around her, however, as to render her absolutely powerless. Suddenly, the light surrounding her changed to a green gloom that deepened as she sank below the leafy roof of the forest. Branches whipped around her, ferns the size of terrestrial oaks rose up from some spongy underbrush to envelop her in their jungle-growth of twining fronds, yet still she sank downward into darker and darker depths of forest gloom. Suddenly, her sickened eyes beheld what looked like a mass of bluish writhing moss from whose palpitating surface myriads of waving tentacles rose and undulated; now shooting up to the very summit of the tree-tops above, now stretching out for what seemed miles along the spongy shore. The thing breathed, shook, palpitated with a life that seemed to deny its moss-like appearance. Its slender questing tentacles shortened or lengthened as though at the behest of some controlling mind, and at its center, a dark hollow formed had enlarged itself as Nadja was drawn nearer a kind of shapeless mouth that quivered and widened under her horrified gaze.

The girl shut her eyes as the slimy tentacle whipped her closer and closer to that loathsome death. Even though the creature's digestive powers might be balked by the material of the space-suit that protected her, once within that all-enveloping mass, it would only be a question of time till the air should give out within her helmet, leaving her to perish . . . . not in one swift, gasping moment as might have happened in space . . . . but slowly, inch by inch, in a viscous and horrible captivity.

That quivering maw was only a few feet away from her helpless body when a fierce and sudden hooting beat in through her radiophone and made her open her eyes. Around her, the moss-thing's countless tentacles were writhing and beating the air like frantic whips. A mighty grip had fastened on her shoulders and she beheld an immense rearing head, upheld upon a seemingly endless neck, and staring wheel-sized eyes that flamed down at the moss-animal beneath her. Then the newcomer tore her free of the enfolding tentacle with a wrench that taxed to the utmost the space-suit's strength, and slipping her into a sort of pouch of skin under its neck . . . . at least Nadja could only explain the sudden swoop she made from light to close darkness thus . . . . he apparently turned to wage battle against the tentacled monstrosity, for strange grunting sounds and horrid gnashings quivered in through the sensitive receiving apparatus of the space-suit radio.

The girl made immediate use of her chance. As soon as she felt her arms released, she clamped her hands on the levers of her two guns, feeling a breath

of relief at the knowledge that she was no longer completely helpless. She waited for a minute, then as the sounds of fury and battle began to lessen, she turned her disintegrator ray against the heaving wall beside her and pressed its lever. A hoarse howl of anguish followed the devastating destruction that ate into the flesh and blood around her as though it had been paper. The bulk that imprisoned her reeled and shook. Hastily, she swept the ray against the other side of her prison and saw it vanish like a dissolving mist. Blood poured around her in a mighty spray, as with a spurt of her rocket-propeller, she hurled herself away from the dying monster whose collapsing bulk seemed to totter above her like a mountain about to fall. She had a swift vision of the blue-moss creature writhing amid a welter of torn tentacles and whitish fluid on the ground far below. Then the impetus of her flight flung her violently through an aerial world of knotted vines and interwoven lianas which oozed green juices as her passage ripped them apart.

The bough of a mighty fern-tree, green and elastic to the touch like any earthly frond, but as broad as the branch of an oak, halted her aerial passage. Clinging to it, she flung back her helmet and drew in deep breaths of the moist forest air. She wished to save as much of the stored oxygen of the space-suit as possible against further hazards. For a few minutes, she hung on to her lofty perch, trying to collect her thoughts and decide what to do next. But the forests of Reinos were no place for pause or reflection. A soft smacking sound behind her made her swing around. Something that looked like a giant white slug, a slug bedewed over all its undulating length with a foamy pinkish ooze, was flowing along the branch immediately above her head, towards her.

As it moved, the ooze dropped off like gouts of saliva and folds of itself seemed to overflow the edges of its formless body in an awful hurry to reach its intended prey. It was fully the size of a rocket-boat . . . . some ten feet long by half as many wide . . . . and Nadja saw that should she ray it with either of her guns, its viscous bulk would drop directly onto her during its death throes. Before it could reach her, however, she had touched the lever of her rocket-propeller and hurled herself once more in a vast leap through the jungle growths. There had been no time to shut her helmet, and the tendrils of the vines whipped and lacerated her face as she plunged through them. Suddenly, she was halted sharply by an impact against something both soft and elastic. Struggling to lift an arm, she found that a delicate filament of shimmering greenery weighed it down with a power out of all proportion to its slimness. Turning her head, she saw that she was enmeshed in a sort of web of these filaments . . . . woven like a spider's net . . . . that stretched for hundreds of feet on either side of her. Even as she looked, a half-dozen new filaments seemed to waft themselves down upon her from some invisible height, imprisoning her securely under their unbelievable weight or unyielding tensile strength. Sickly, even while her hands clamped themselves on the levers of her guns, she thought of her open helmet, and of herself as a fly in a web waiting for the spider to approach. The conviction grew upon her that she would never escape this world of ceaseless horrors into which she had plunged.

● Another filament fell down upon her, then another. After a time of waiting, a strange being swung into sight along one of the larger cables of the web. A second followed, and then they seemed to swarm around her. Hairy things like apes and a little larger than a man, at first glance they had a reassuring likeness to earthly forms of life, till a second glance showed her that their further equipment of arms and legs . . . . on which they deftly moved over the swaying cables of the web . . . . rendered them more like immense thick-bodied hirsute spiders.

Their faces were round and smooth with a fringe of hair around the chins and a monkeyish cast of features, but from their bodies protruded about eight ap-

pendages ending in prehensile claws or fingers which seemed to possess the capacity of both winding themselves around an object and clinging to it as a fly does with the pads of its feet. With all this strangeness of conformation, however, Nadja thought that their appearance, compared to that of the monstrosities she had already seen, was almost humanly sane. The slanting black eyes that stared at her seemed less rapacious than curious, as though the minds behind the round foreheads possessed some capacity for thought and other emotions than appetite. Yielding to an impulse, she waited before having recourse to her guns. Though she could move neither arm nor leg, she could still use either of the rays within a radius limited by the freedom of her hand and wrist . . . . she could afford to wait. These spider-men of Reinos were not wholly repellent to her. Like the prehistoric ape-man of Earth, it seemed to her that the indication of some burgeoning intelligence was already visible in their eyes and faces. One of them, she saw, was a female and carried a tiny baby creature cradled in two of her hairy arms.

The spider-men seemed equally ready to stay and examine her. Her conformation was perhaps near enough to theirs to give them food for thought. Their numbers had increased, growing more numerous minute by minute while she hung there, but no overt act had ensued to break the pause between them when the peace of the upper levels of the tree-tops was rudely shattered from below. Already, Nadja Manners had learned that peace of any kind was a rare and brief commodity on this steaming world.

As she hung within the meshes of the spider-men's web, a shrill hooting rose from the veiled jungle depths below. Immediately, a wave of panic seemed to sweep over the spider-folk. The female with the baby fled towards the invisible upper reaches of the tree-crests at dizzying speed, and two-thirds of the others vanished at her heels . . . . running across the swaying trellises of their net as though death itself had sent out a call. Before those nearer the girl could follow their example, a ghastly, gory head upthrust itself from the shaking foliage beneath, and thin screams of absolute hopelessness rose from the cowering tree-folk. It was the head of a snake of mastodonic size; horned like a rhinoceros and borne on a long undulating neck, from which sprouted, far down near the foliage, strange webbed limbs; half claws, half wings, like those of a gigantic bat. Beneath the horns, the thing's dead black skin was studded with small knobs from which bluish sparks emanated to burn away at a touch the filaments of steel-strong web around her. Nadja saw one of the spider-people come within the range of this crackling glow and stop its mad scramble to some higher safety to remain in a sort of paralyzed waiting while the awful snake-like head turned and reached for it with jaws that dripped already from the aftermath of some horrible feast. At the same time, she saw, a hundred feet below her, a squat and gigantic limb draw itself out of the underbrush and hitch itself a score more feet up the tree to which it clung, while its webbed forelimbs or wings lifted its crackling head to a still higher point of vantage. Evidently, the power within the knob-like decorations of the lizard-beast's head was at once a paralyzer and an agent capable of destroying the immense tensile strength of the tree-folk's net, while its immense length of neck and body enabled it to pursue them to their highest fastnesses.

● In three gulps, it had seized and devoured as many hapless spider-men before the bonds of horror set upon the earth-girl's muscles by the gory apparition snapped. The horned beast was turning lazily in her direction when she gave it the fire of both her guns. Under the united blasts of the heat-ray and the disintegrator, the web around her melted like mist and only the strands flung across her hands and shoulders held her above the invisible ground. The lizard-monster never knew what hit him. One minute his lolling head was dripping blood above the

cowering tree-people; the next, the long neck collapsed, severed just below the eel-like jaws, while the heat-beam glowed for a brief moment around the horn-tipped head before it fell . . . . a black and shriveled cinder . . . . into the green gloom from whence it had come.

Even as the spider-men were shiveringly realizing that their doom had been, somehow, defeated, Knute Savary was fighting his way through the steaming depths of the primordial forest below. Above the tree-tops, Telzon, in answer to his orders, was already speeding in one of the rocket boats, scanning the impenetrable forest roof for signs of Nadja's possible survival. There was little hope in Savary's heart as his plunge hurled him from the high plateau down into the violent verdure below. That he was going to probable death himself he knew perfectly, and his orders to the wizened and faithful bird-man had been stringent with this eventuality in view. The Lyddan was to avoid all danger unless the rescue of Nadja was directly involved, and on Savary's failure to reappear within the day from the green depths into which he was plunging, he was to return to the safety of the space-ship. If, after a week's waiting, neither of the terrestrials had reappeared, the Lyddan was to return to Speira, there to strive to his utmost to continue the work that Savary had undertaken. Should the vast conception of the neutron-machine prove a success, Telzon was requested to return to the Older Ones of Lydda and ask their help in finding some means of bringing to Earth the formula and invention that would save her from the airless doom so that the Earthman's destruction need not mean that of his own planet; a fact that left Savary free to fling away his life more wholeheartedly if he chose in his quest for Nadja.

It was the thought alone of the mighty protection that the girl possessed in the strength of her space-suit that gave Knute Savary hope as he plunged through the steaming air. The tentacle that had whipped her down into the forest had given him a fairly clear idea of the horrors of destructive appetite that might be lurking under its tangled canopy of leaves, and he knew that unless she was still battling them with her guns, his chances of finding her within those jungle labyrinths would be nearly hopeless. It was for the sound of the spitting heat-ray that he listened, even as his falling body cleaved the matted forest roof beneath him.

The Ape-Giants and the Spider-Men

● The moisture-laden depths of the Reinos jungle possessed a green darkness akin to that of the sea bottoms. Their swampy tangles of immense ferns squirmed with a fierceness of life that seemed like the drunken exuberance of a nightmarish and fancifully wasteful nature. Even the vegetation had a rapacious aspect. As Savary plunged down and down like a living plummet into the endless foliaged levels of the leafy sea, strange claws and tentacles shot out to intercept him . . . . whether of voracious fauna or flora, he passed too swiftly to know. The blaze of his heat-gun burned them to cinders before he had shot past their lairs. Now he was whipping through the impeding underbrush tangle, his rocket-tubes hissing as he used them as brakes against the invisible soil. At last he felt the soft squelch of breaking ferns and branches, succulent with sap, and then the yield of a spongy soil under his feet, and for perhaps ten minutes, he walked over the steaming moss before the life of the lower jungle became aware of him.

There was, for the moment, a complete silence in the green gloom around him. He had landed some distance from the spot where Nadja had disappeared . . . . it had been impossible to locate the exact spot where the bluish tentacle had drawn her under the foliaged sea . . . . and no sound of battle or flare of gun pierced the deep stillness where he moved with straining ears. He was in a world of moist and violently pulsing vegetation. The vines tangling around the branches of the gigan-

tic fern-trees had the pallid likeness of snakes, and every broken leaf oozed a sap as thick and rich as blood. The moss seemed ready to curl and quiver with life. Enormous pale-green flowers opened and shut hungrily as he passed them, as though they were alive. A leaf he brushed against unfolded and glided away after the strange insect that it was had beaten its wings viciously against the glassite of his helmet and stared at him through it with enormous and horrible eyes.

Suddenly, as he walked, he felt something wrap itself around his feet and swiftly enmesh him to the waist. Looking down, he saw a gaping mouth . . . . a green cavern of spume-filled gloom . . . . opening almost under his feet, while the livid folds of what looked like some immense ectoplasm, greeny-white and slimy, undulated and pressed upwards around him. Half vegetable, half animal, it spread in a semi-growth for hundreds of feet around in a flat layer almost indistinguishable from the surrounding soil. The blast of his disintegrator seemed to tear its very center out of existence, and viciously raying the remains of its loathsome bulk, Savary walked on with an added care, only to halt again as a ghastly scream of death and terror followed by horrible crunching sounds and gobbling noises arose from somewhere behind him. The next instant, the silence was again shattered, this time by faint sounds of battle from somewhere in front. For the moment, his heart quickened in a wild hope, and he leaped forward, then checked himself again. The sounds ahead were no noises of scientific battle, but the older, cruder sounds of primitive combat: snarlings and hootings and hoarse, horrible rendings of flesh and muscle under massive teeth . . . . a Homeric sound! Creeping forward cautiously, he came upon an epic struggle between a bat-like horror, fully fifty feet in diameter . . . . a fanged and clawed and iron-beaked thing of vampirish lines and dull red hue . . . . and a two-legged being with a blue hairless skin, made like a man, or rather like man's ancestor, the man-ape, save that it was horned like a bull and of gigantic proportions; full twenty feet in height and broad in proportion.

In the center of a small clearing, the two creatures were locked in a struggle to the death. It was clear, however, that the winged being possessed a distinct advantage of armament. The blows of its membranous wings were raining like hail upon the ape-giant's head, while its fierce beak tore at the straining muscles of the tree-like arms that wrestled with it. As Savary came upon the scene, the two-legged being sank to its knees beneath the tearing, rending attack of the bat, but its arms still held the winged horror close to him with a despairing courage that the terrestrial suddenly understood as a movement of the Homeric combatants revealed a female of the ape-giant's species cowering on the ground behind him with a babe at her breast. In a quick onrush of sympathy, Savary flung up his heat-gun (more accurate at close quarters than the disintegrator) and rayed the head of the bat-like monstrosity as it reared away from the blindly wrestling giant. It screamed once . . . . a high, unearthly howl . . . . then collapsed like a pricked balloon. Streaming with blood, the ape-man stumbled to its feet and stood swaying, terribly scarred and torn, but with defiant eyes turned upon what might be a new foe.

Savary felt a sudden sympathy for the undaunted giant. Standing quietly where he was, he flung all his mind into an effort to impress his friendliness on whatever brain the immense creature before him could possess. If it was a mere conglomeration of appetite and combative lusts like the greater number of beings of the Reinos forest, the effort, he knew, would be in vain, but the creature's defense of its mate struck him as being the act of a reasoning being, and the ape-man's configuration was near enough akin to his own to make him loth to turn the murderous ray of either of his guns against the spent warrior. For a steady minute, he stood and sent his thoughts beating out towards the vast blue shape

watching him. Suddenly . . . . with startling unexpectedness, for he had expected no more than a slow compliance from the embryo mind he imputed to the creature standing bloodily enormous before him . . . . he felt an answering thought take shape in his own mind. A stumbling thought that said dubiously: "Friend? Small Ape . . . . Friend?"

Savary held his arms wide; the ape-man would not realize that the heat-gun was still prudently clutched in one hand; and walked slowly out into the clearing. The giant looked uneasily at his mate and then back again at the terrestrial, but he did not attack. Pausing only a few feet away, he drove his mind to the task of impressing images on the slower minds of the creatures before him. Punctuating the process with the thought of his friendliness and his need of their help, he flung a mind picture of Nadja at them . . . . of Nadja writhing in the clutches of the giant tentacle that had snatched her away from him. The ape-man relaxed. Turning, he made a sign to the female who rose nervously and drew near, protecting her little one with both massive arms. They towered like trees above the Earth-man, but the slow and fumbling messages of their minds showed them to be of a much more advanced mental development than Savary had dreamed possible in this nightmarish world. Frantically, as he desired to be about his search for Nadja, he realized that it might be a trifle less hopeless with such allies as these, and when the male giant leaned down and lifted him up, setting him on one massive shoulder, he made no objection.

● Swinging up into the trees, the two blue giants flung their mighty bulks from one gigantic bough to another till they emerged upon a rocky peak, that lifted from the dense jungle growth into clearer and purer air. Here a stockade of giant logs rose fifty feet, woven together by lianas of the thickness of ordinary trees. A dozen other ape-giants moved about this defended area, two or three males and a half-dozen or so females with twice as many infants. The peak dominated the forest roof, and lifting his head, Savary saw the trail of fire left by Telzon's rockets in the darkening sky overhead. Some three miles away, the lip of the plateau where he had stood with Nadja loomed up out of the violent verdure around. Drawing the wounded ape-man's attention there, Savary pointed out what he thought was the approximate location of the spot where she had disappeared and painted a new picture of the tentacle that had swept her away. The blue giant nodded. On Savary's mental vision, the image of the moss-creature impressed itself slowly and fumblingly. Horror deepened in the terrestrial's mind. Was this the loathsome end to which Nadja Manners' self-imposed exile had brought her? Perhaps he would never even know how she had died! Calling once more on all the resources of his powerful mind, he begged the ape-man's help, pointing downward at the green and ominous jungle and out to where Nadja had disappeared. He urged and pleaded and promised his help against their enemies if only they would lead him to the spot where dwelt the monster Thing that had seized the woman he loved.

A maddeningly slow interchange of thought-images followed. Knowing nothing of their language and lacking Telzon's power to assimilate any new tongue instantly, this was the only way he could talk to them. At last . . . . as in earnest of his power . . . . Savary drew forth his disintegrator and turned it on the crowding jungle beneath. The sight of a giant fern-tree dissolving into mist allied to Savary's promise that he would use the same magic power to clear away all the jungle that hemmed them in so that their stockade would stand in an empty space that few of their enemies would dare enter, produced a decisive effect. They had reached a tribal state . . . . one sufficiently organized to make them feel superior to the immense and stupid monsters inhabiting their world, terrible though these were . . . . so that their promise to lead Savary through the tree-tops to the place where the blue moss-creature

couched was not overly retarded by fear. With a half-dozen of them as escorts, he was soon swinging through the high levels of the jungle world till they paused above the sanguinary scene of the combat between the pouched animal and the moss-creature.

A renewed hope sprang up in Savary's heart as the awful spectacle of death and destruction greeted his eye. The mark of the disintegrator ray was clear on the terribly wounded hulk of the pouched monster. If Nadja had come out alive from the clutches of these loathsome denizens of the green underwoods of Reinos, she might still be somewhere in the pathless jungle holding her own, as he had held it till he had met the ape-man, against the creations of a fantastic nature. He looked around him. Darkness was falling fast. The jungle depths beneath him were already plunged into deepest night. A heavy silence brooded over the matted roof of the fern-forest of Reinos. It was impossible to look farther that night, and strain his eyes and ears as he might, no sound or flash of heat-gun in the distance told of Nadja's presence in that dulling, moist, and ominous world.

When Savary refused to return with them to the stockade of their tribe, the friendly ape-giants wove nests of long liana's above the shadowed depths of tangled foliage and settled there with him for the night. As the darkness grew deeper and Reinos plunged into her night, strange roars and hoots and howls and ominous crunching sounds arose from the blood-drenched depths of the fern-forest beneath them. Unearthly echoes of lurid combats beat up and the call of unimaginable birds swept down from above.

● With tensed nerves, Savary lay above this invisible scene of carnage and blood-lust waiting only one thing: the coming of the dawn. His impotence . . . . while somewhere Nadja might, at this very moment, be fighting for her life . . . . was a torture that stripped the essential humanity in him to the quick. The last of the soulless super-men who had watched the stars from his Andean observatory as he coldly lashed a world into subservience back on the lost and distant Earth, vanished in those hours of helpless waiting in which his mind was powerless to do aught but control the storm within his veins.

As he lay, the flare of rockets overhead suddenly told him that Telzon was returning along his trail of earlier afternoon. He sent his call winging silently up into the night sky and saw the rocket boat dip and plane down towards the tree-crests where he swung beside the blue ape-men. Crashing through the upper leafage, it settled heavily in the crotch of a giant tree, setting another one on fire with the last flare of its rear rockets. In a panic, the ape-men fled through the night-blanketed upper branches. Only the wounded giant that he had saved from the vampire-beast remained, cowering beside him. One of the giants slipped as he hurled himself through the night-wrapped boughs, and a horrid roar of triumph arose from the dark depths beneath as his bouncing body dropped into some waiting maw. The Lyddan's ancient nerves cringed at the sound as he used the ray from his force-beam belt to waft himself to Savary's precarious perch where he reported a vain search over the complete area of the forest summits. The earth-man said: "There will be a trail of sorts leading from here. If she wasn't killed within the first minutes of surprise, she may still be alive. Thank Heaven she wore her space-suit! Curse this night that makes it impossible to . . . ."

He stopped. In the darkness beside him, the little bird-man had started sharply.

"Someone is sending out a mental message!" he cried. Then . . . . "It is Nadja! She is trying to reach us: to tell us she is safe!"

Savary's mind had now seized the message which the Earth-girl had been trying for hours to transmit. Telzon . . . . under his directions . . . . flung back a thought-description of their location, and Nadja's answer came clearly across the indeterminate space between them.

"It is too dark now. I will get the friendly creatures I am with to lead me there tomorrow at dawn."

Immediately and despite the hooting roars and grim sounds of death and carnage rising from below, despite the tenuousness of the vine hammock from which he swung over the grim and phosphorescent forest depths, Knute Savary fell into the dreamless sleep of infinite relief. Regaining the greater safety of his rocket-boat, the old Lyddan elder soon followed his example.

An angry chorus of snarls, beating down upon them from the heights of adjoining trees, awoke them both in the gray and early dawn. Above the steaming world, a white light was slowly waxing, and the ape-giants had rejoined them and were answering the challenge with low menacing growls; their vast heads swaying from side to side in the manner of animals about to charge, and their great bodies, crouched in the crotches of the fern-tree tops, looking like Simian nightmares. The boughs beyond them were swarming with strange hairy beings that seemed by their agility to be invested with innumerable legs. Suddenly, Nadja's clear voice rang across the leafy gap that separated them.

"Savary! Telzon! Are you with these giants?"

The ape-giants suddenly uttered a terrified shout. As though the earth-girl's voice had been a signal, the great tree among whose branches Savary swung, seemed to heave and shake like rushes in a gale. The blue ape-men clung to it like monkeys, but the terrestrial had loosened his hold of the nearby boughs in his eagerness to greet Nadja and the first vast shiver of the tree sent him hurtling downward through the leafy sea. Telzon . . . . bending terrified out of his rocket boat . . . . saw an enormous claw reach out of the misty, verdant depths and seize on the spinning earth-man's form. A great head with a parrot-like beak upreared for a moment from the agitated roof of ferns, then disappeared, and some vast bulk threshed its way through the undergrowth bearing the stunned form of Knute Savary in its clutch.

The Departure of the Gods

● It was the threshing of the branches against his uncovered face that had lashed Knute Savary unconscious as he fell. When he came to himself, he was being borne through the phosphorescent dawn-dimness of the forest depths. The clasp of a mighty claw held him helpless to move and only a foreshortened view of the folds and wrinkles of an immense and scaly neck and a blur of moving verdure explained the situation to his waking mind. Suddenly, the thing stopped, upreared itself till Savary was lifted some fifty feet from the spongy ground, and turned an awful beaked head upon its helpless prey. Eyes like cartwheels blazed greenly through the twilight of the underwood, and the great beak plunged down upon him like the open maw of some terrific cavern. The space-suit held as it clamped over it. Savary looked upward at the roof of an awful gullet as the beak closed over his head, locking him in a fetid darkness and pouring the foul, poisonous breath of the beast through the open visor. Struggle as he might, that noxious breath began to overpower his still-shaken senses like a poison gas. He heard the beast's screech of rage as its jaws failed to make an impression on the space-proof walls of the space-suit, lift like a mammoth steam whistle through the Reinos dawn, felt himself shaken back and forth like a dog shakes a rat, in the grip of the mighty beak. Then he lost consciousness once more, thinking, even as he succumbed, that this was the end of all his dreams of an asteroidal kingdom, and, as he drifted off, that he was back again in his secret Andean laboratory, watching the paralyzing gas mount upward towards his lips.

Back at the rocket boat, Telzon and Nadja stood staring in appalled horror at the waving tree-tops that marked the hurtling flight of the parrot-beaked monster. It was the little feathered bird-man who recovered his senses first. Nadja had

flung herself across the leafy gap between them with a spurt of her rocket tubes and stood white-faced, staring down at the green depths below her, while the ape-giants cowered and mouthed in alternate rage and fear. The snarling of the spider-folk had stilled to a dead silence, and Telzon picked their terrified thoughts out of the intervening air. Turning on the blue ape-men, he beat in on their minds that the woman beside him was the mate, the woman of the man they had served and that she was to be obeyed if that man was to be rescued. He turned his thoughts on Nadja.

"Follow with them and your own creatures as fast as you can," he said. "This rocket boat holds only one."

With a roar of rockets, he was off on the trail of the dinosaurian monster, while Nadja, turning on both apes and spider-men, ordered them to lead her through the upper tree-crests along the path the parrot-beak had taken.

Even as the great beast roared in rage at feeling his jaws slip off helpless from the Earth-man's space-suit, the old Lyddan heard it and headed the rocket boat towards the sound. Ramming the small craft through the fathom-deep foliage, he sought to drive his way down to the corpuscular world where the monster stood, but the boat caught in a tangle of mighty boughs and wedged itself firmly. Leaving it, the little bird-man sprang valiantly down into that green nether-gloom and soon beheld the flaming enormous eyes and gigantic beak of the pachydermic monster below.

It was a thing fully a hundred feet in length, equipped with a tremendous tail which it used to lift itself to nearly its own length in the air and possessed of clawed limbs strong enough to shake even the strongest tree in this mighty forest. Now, in a frenzy of rage, it reared and threshed the plowed forest-path behind it with the lashings of its tail, while it shook the inert form of Savary savagely about.

It was a fearsome spectacle which the old Lyddan contemplated from above. The slaverings of the beast filled the dawn-forest with intolerable noise, while the lashings of its tail demolished a fern-tree at every blow. Hanging from a branch above it, the bird-man aimed his disintegrator at a spot close to the beast's neck and fired, but the weaving of the giant head disturbed his aim and the ray scoured a terrible wound across the pachydermic shoulders, maiming, but not killing. With a screeching roar, the giant animal hurled its whole bulk straight into the air. A shake of its head sent Savary flying off into the underbrush to one side while its rearing mass of flesh and muscle attached itself with mighty claws to the nearby trees as it looked about for the cause of its terrible injury. Telzon fired once more, even as the mountain of flesh reared above him. As he fired, the tree-shaker saw him. The disintegrator-ray met its charge and drilled a death-giving hole through its extended and enormous throat. Nadja and the ape-giants, swinging at a dizzying pace through the tree-tops, saw the forest roof ahead sway and bend as though in the grip of a cyclone, and heard the horrible death-howl of the toppling beast. The vast bulk leaped straigh up into the air . . . . and down, sweeping the little bird-man earthward beneath its collapsing mountain of flesh!

● When they arrived, the last tremendous convulsions were running through that expiring bulk. An ape-man swung himself to the ground at a safe distance and raised a howl of triumph as he found the unconscious form of Savary caught in some boughs near the ground. It was another, who by the signs of the broken trees and branches around, read what had happened to Telzon. But it was two hours before the united strength of the blue ape-giants aided by the steel-strong filaments which the spider-folk spun at Nadja's command managed to lift that mighty body sufficiently to allow Telzon's senseless form to be removed.

The space-suit had held, but when they carried him to the rocket boat and got him out of it, they saw that his delicate and ancient form had not been strong

enough to withstand the ordeal. While the ape-man sang a sort of savage chant of triumph over the dead body of the monster below, and the spider-folk chattered in the remote tree-tops above, he came back to consciousness under the stimulus of the drug Savary gave him and nodded and smiled weakly at the two terrestrials.

"Tell them on Lydda that Telzon died as our ancestors used to die . . . . in action," he gasped slowly. "They will send you other Older Ones to help you for my sake if you should need them. Bury me on Speira . . . . make my tomb a monument to the first planet to be lifted from its age-old airless grave. Do not grieve over me. I have had more adventure in the last months of my life than my race has had in generations. I am content."

Nadja bent towards him with tears in her eyes. "You must not die, Telzon," she cried.

"We will get you to the ship," Savary said urgently. "Once there, our drugs will mend you."

The old bird-man shook his head weakly. He held both their hands. With the approach of death, the power of thought transmission had diminished, and he spoke in the slow, fumbling language of words.

"It is useless. Our Lyddan bird-bones were fashioned too lightly for the violence of this terrible world. I am glad I saved you, Savary. There is much for you and Nadja yet to achieve. I am failing fast, but before I go, I would like to hear how Nadja happens to be here. How she escaped the horrors of this terrifying forest."

The Russian girl looked at Savary, who nodded. Already, the grayed feathers of the old Lyddan's crest were glazing and dulling before death. Sitting beside him, she bent close and told her tale in as few words as she could. The ape-men gathered around them . . . . awed giants sensing here a death of more portent than their own gory ends . . . . and the spider-folk crept closer, swinging down on their delicate filaments of green to throng above the little group. The silence of day had fallen on the neolithic forest and a faint and filtered sun warmed its steaming crests.

Nadja told how, after her destruction of the horned animal, the spider-people had worshipped her as though she had been a goddess. Having seen her kill the most terrible and impervious of their enemies in one flash, they looked upon her with a cowering awe. Through gestures, she managed to convey her need of a safe refuge, and they had brought her to their strange village high above the lower tree-tops and had helped her regain from there the emplacement of the space-ship which she had found deserted. Returning once more to the jungle, she had begun a frantic search from the tree-top heights of the matted green world below, but it was only when darkness forced her to take refuge once more in the spider-men's village, that she had thought of sending out a thought-call towards them.

When she had finished, Telzon asked Savary for some more stimulant, and after a brief exchange of words with him, used his last flicker of energy to communicate to the savage beings around them the orders of the powerful strangers who had come among them. More clearly than any of the two terrestrials could have managed to do it, he told them that their two species would be made the lords of Reinos if they obeyed Savary and made eternal peace with each other. He pointed out that they were the cleverest of the beings who lived on this crowded and sanguinary world and that it was to their interest to form an alliance that would help them destroy the stupider but more gigantic forms of life with which they had to contend.

"This being will give you some of the weapons that can destroy your foe in a flash," he said. "And if you obey him, he will return, if he can, to help you further when his work in the skies is done. You must never, however, use these magic weapons against each other or great evil will befall you."

His thoughts began to falter. Suddenly his eyes closed, all his feathers quivered, then lay still. Telzon of Lydda was no more!

Another day gone. Once more the young world of Reinos had sunk into its carnage-haunted night. Within the spaceship, Savary and Nadja had sadly sealed Telzon's frail body within a gleaming stelumin shell for burial on Speira. They would leave at dawn. Under the glassite dome of the observatory, Savary stood with the girl who had followed him into exile, looking up at the plume of fire above the distant volcano. He had told her of his love, had seen her face change and tremble from its mask of restraint into the radiance of happiness. Preordained mates, they questioned the enigma of creation together, pondering on the vast tapestry of cosmic life of which Reinos was a part.

Savary spoke. "The ape-giants and the spider-men will live in peace till we return, I think, and the disintegrator rays we have given them will help them destroy the worst of the loathsome monsters with which this planetoid abounds."

Nadja smiled a little, for the first time since Telzon had died.

"They think them weapons filled with imprisoned lightning. They will undoubtedly adore them and guard them as fetishes to be used only by their chiefs or priests . . . . when they reach the stage of possessing priests."

Savary nodded. "They will last for hundreds of years, with care, since they need no recharging but are self-renewable, and will probably form the neuclei of some future tribal fetish worship."

They fell silent. Through the open radio-receivers of the ship, the voice of Reinos mounted towards them from the darkness-shrouded depths below. Deep lowings, as of mastodonic cows calling to their mates, lifted among the hooting roars and sounds of endless, pitiless combat that forever drenched the carnivorous mosses of this world with hot, fresh blood. Across the cloudy skies, the volcano in the distance flung out a red-lit plume. The thin-skinned earth pulsed and shuddered lightly under the pressure of her inner fires. In the mist-filled jungle darkness, both terrestrials felt that new things were reaching out for life, that existence was stirring within strange animal and vegetable forms. Nature was lavishly destroying what she had tentatively created. The pageant of organic life was moving on its wasteful, bloody upward way.

CHAPTER XII

The Revival of the Speirans

● Against the star-beaconed abyss of space, Speira glimmered like a sphere of mother-of-pearl. Nadja touched the lever of the braking rockets almost instinctively . . . . habit had made these routine matters of space-navigating almost as natural as breathing . . . . and felt an odd thrill in her heart at this approach of the little world which was the nearest thing to home they possessed in all this immensity of the void.

They had lifted from out the steaming skies of Reinos with a feeling of relief, knowing, however, that they must come back to it often, if Speira were revitalized, since it was here alone that they could find life-forms and seeds and fruit fit to be acclimatized on a reborn world. After its miasma of lust and blood and the blind laws of its pitiless riot of life and growth, the icy purity of the spacial night had seemed a clean and lulling thing, and only the loss of Telzon spoiled their new sense of happiness.

As the small sphere of Speira broadened and filled the vision-plate, Savary bent towards Nadja who sat at the controls.

"Aim towards the shadow-band, Nadja," he said. "We must approach on the side where night rules, so that we may switch off the neutron-beams while they are inactive."

Within both their minds, a paramount question ruled. Would they find air on Speira, or only the eternal, barren wastes of a dead and finished world? Carefully, as Savary had worked out his vast prob-

lem . . . . mighty as his brain might be . . . . both he and the girl knew how often the most incontrovertible equation of science had crumbled, inexplicably, before the final test of actual trial. Out of the vast, unexplored reaches of science, unknown factors rose to nullify man's most exact concepts . . . . factors on which even Savary's mind may not have seized. On what they should find on Speira . . . . eternal death or promise of life . . . . depended the fate of Earth, of planets now dead and planets yet to live. As the braking rockets flamed and they sank slowly towards the bleak plains beneath them, even the breath of Knute Savary quickened and the chill of a dread uncertainty clutched at Nadja's heart.

The dead world arose and cupped itself around them as they fell. Its serrated crests and bone-bare levels outlined themselves harshly against the star-stabbed night . . . . incredibly hopeless and forgotten of time after the young planetoids which lay behind them. The keel of the *Victory* skimmed over the space-frozen ground, then settled as Nadja picked out her landing place, throttled the rockets to a mere trickle of flame, and brought them to rest close to one of the inactive solar-machines.

Savary was bending over the atmospheric-tester before the last shiver of their landing had coursed through the mighty hull. Suddenly, he straightened. His eyes flashed triumphantly.

"Speira has an atmosphere once more!" he said. "It is too rarefied to support life as yet, but the neutron-beam has done its work . . . . we can switch it off, I think. Speira is drawing her atmospheric envelope to her from out of the void!"

Clambering swiftly into their space-suits, they hurried out into the night, urged by some desire to find, in some manner they could hardly explain, a corroboration more vivid than that of the test-tube. As she looked around her, however, Nadja felt an unreasoning sting of disappointment. Nothing seemed to have changed in the lunar scenery around them. On the meteor-pitted ground, the powdered dust of ages enmeshed their feet. The lonely mountains lifted their jagged outlines to the icily blazing stars. The lifeless petrified wastes around them lay as they had lain for lost and unchanging æons.

Death, and not life, still ruled. Mechanically, almost, they walked past the inactive solar-machine in whose cold mirrors the frozen flares of the reflected stars burned palely across the seamed soil and up a crevassed slope where the faint tracery of an ancient stream had survived the levelings of time. On the crumbling edge of the hill, they stopped and looked across the dark sweep of plain and devastated peaks that lay in front. The heavy night of space ruled in all its harsh blackness over the weary scene. Nadja felt that the test-tube of the atmosphere-reader must have lied. Never before had she been so eerily conscious of the bitter airlessness of this forgotten sphere, but Savary, standing at her side, uttered suddenly an exultant shout. She turned and saw him bending over an eroded outcropping of rock. At the very bottom of a deep cleft in the crumbling stone, Savary's head-lamp was shining on a crystalline glaze, a powdering of almost impalpable snow . . . . no more than a smear across the space-worn rock . . . . a dust of fine, caked crystals whose meaning was LIFE!

As she stared down at it, she knew that Savary's theories were proven to the hilt. Henceforth, man's hands would hold the power to resuscitate the dead worlds of his system and to turn the airless doom back from those that were still alive. Man's mind had triumphed over the Cosmos' might!

The solar-machines were turned off. Some day, perhaps, they might be used again, but their work was done for the moment. Small Speira, vibrating with an ever-increasing vitality, was daily wrapping herself closer and closer in her refound air. Bemused almost by the wonder of what was happening around them, the terrestrials built a tomb of green metal (the Lyddans had told them that it was called vulcan) for Telzon, high upon one

of the frost-powdered peaks, then dallied in almost idle contemplative living, resting strained nerves and overtaxed bodies while they watched a new miracle of nature take place.

They were not inactive, however. There were many minor preparations to carry forward. Savary prepared a plan for a space-ship that would be a smaller edition of the *Victory*, which they intended asking the Lyddans to help them build, and by which he hoped to take to Earth the knowledge that would avert the doom creeping upon her. The Older Ones of the inner world of Lydda were too wise and serene, he thought, to hold any rancor against him because of Telzon's death, and their high civilization and powerful force-beams would make the construction of a space-ship . . . . of vulcan instead of stelumin . . . . . a simple matter enough.

● They studied also the dead language of the Speiran manuscript they had found and filed and experimented with the many chemical formulae that the old bird-man had left them. The formula for the life-prolonging elixir of the Lyddans was among these . . . . a formula that almost completely immunized the organic frame against bacterial attacks so that the ultimate wearing out of the body's tissues became the only remaining form of death known to its users. Next in importance was the formula for a milky, cloudy liquid over which the little bird-man had worked for days while the solar-machines were being built by the robots. He had told Savary and Nadja at the time that this was an improvement on a formula long known on Lydda where suspended animation and methods of dispelling it was an old part of their knowledge.

"If we ever find the cataleptic sleepers of which your ancient manuscript speaks, Savary," he had said. "This should be useful. I have worked on it with care. It is, I think, a liquid that is the next thing to the nutritious processes of life itself. A solution of chemicals so balanced as to provide all the necessary nourishment to even the most inert tissues immersed within it. I believe also that, taken internally, one could live on it without need of other foods for years on end. . . . In this it would be more useful than your condensed food-tablets for space-flying."

Meanwhile, and weakly, the transformation intensified itself around them. The constellations now glowed with a softer and softer light. Slowly, they saw the sky of daytime pale from an airless black to the softened shade of midnight blue, while the glaring, untempered sun became daily less fierce as the thickening atmosphere softened the scorching power of its rays. A faint, brief dawn, a lingering moment of dusk now divided the day from the swift onslaught of the spacial night and the shining cylinder that was the *Victory* gleamed briefly each morning with the thin white breath of frost.

One morning, after bending for long over the atmospheric-reader, Savary pronounced the air dense enough at last for human lungs. That evening it rained. Nadja was enjoying the pleasure of moving freely, without the constriction of a space-suit, about this reclaimed ghost of space where no living organic being had breathed a life-giving air since immemorial time. Her lungs were getting used to the thin and space-washed oxygen, and her freed body seemed feather-light on this world of small gravity. Warmly wrapped against the bitter cold that swept down at the coming of night, she stood on a nearby peak, watching the brief dusk-glow color the great bulk of the *Victory* below her. There had been a heavier than usual deposit of brittle snow the night before, and the thirsty sun had melted it and lifted it skyward in thin mists that were the first clouds Speira had known in half a million years. At sunset and the icy breath of the still-lightly tempered spacial night, the spreading moisture condensed and drifted down . . . . a brief, thin rain that swiftly changed to snow. The earth-girl's cheek grew moist under that ghostly caress, while beneath the light patter of that first, new rain, the powdery dust of desiccation around her seemed to stir and

breathe. Next morning, when the sun's rays beat down once more upon the little world, small pools of water, too deep to be instantly volatilized, gleamed like newborn jewels in the deep hollows of the eroded rocks. Water had come to Speira at last!

That evening, Savary said: "Tomorrow we must begin our search for the sleeping youth of this planetoid. Afterwards . . ."

Nadja turned on her deep cushioned seat and smiled into his eyes.

"Afterwards . . . . what then? . . . ."

"We will go to Lydda and ask the Older Ones to unite us with all ceremony and dignity, after whatever fashion they use. We must finish our tasks before taking time for love. Then we shall build another *Victory* . . . . one unshackled by repellum . . . . and fly to Earth with our warning and way of escape. Afterwards! Think of how vast will be our afterwards, Nadja. We shall have all the asteroids for an empire! . . . . an empire from which we may build a future union of all our solar system . . . . a vast biological challenge to unsentient space."

● On the morrow, they brought the space-ship itself to the dust-buried plains before the city of the forgotten race. A brief sweep of their disintegrator rays cleared a broad swath of the plain of its grave-cloth of ancient powdered soil. Once more . . . . space-suit clad against the airlessness of the underground depths where Speira's new atmosphere might not yet have filtered . . . . they passed down that deep-plunging flight of stairs and through the pillared hall where the old inscriptions of a happy world dreamed on the lintels of earth-blocked doorways. The door leading to the resting place of the ancient Speiran elders lay as it had fallen, across the glowing, translucent copper-tinted floor. The lambent light of radiating matter still pulsed unchanging over the walls and ceiling of the chamber of the dead vigil-keepers of Speira. In this world where they moved, Time had ceased to come, and only their footsteps . . . . the imprint of their former passage . . . . leading on through the tunnel and towards the glowing room showed that change, at last, had found its way to this grave of the endless years.

The dead ancients of Speira still sat in their lambent arched niches. Savary saluted them gravely. When the outer air reached this buried room, he knew that their mummified remains would cease to be. Having outlasted a half-million years, they would crumble into dust at the first breath of that revivified world for which they had waited so long. But for the moment, they sat in the grave dignity of their death like watchers whose vigil was still unrelieved; their two-thumbed hands folded on their shrunken knees, their austere, bird-like faces turned towards the beings from another world who stood among them.

Under the spell of the eerie light's ghostly radiance, they made a complete examination of the circular room, but it seemed to hold no trace of a doorway of any kind. At last Savary spoke wearily.

"I suppose there is nothing else to do but to start a thorough investigation of every one of the passageways leading out of the great hall, and that will mean the work of weeks."

Nadja was assenting dispiritedly when her eyes fixed themselves upon the central floor. "Isn't that a dark line running through that glimmer?" she asked sharply. "See! It is roughly square in shape!"

Savary bent and ran a hand over the spot. The darkness she spoke of was simply a thin line where no light seemed to generate.

"The floor blocks are slightly unequal," he said. "Perhaps we can lever them up with our force-beams."

Under the tractor-beams of their Lyddan belts, the block of copper stone lifted slowly. Beneath it, a narrow flight of glowing steps led downward to a low, vast hall where the same pulsing glimmer moved fluctuatingly over walls and floor. Nadja exclaimed softly. Ranged in a quadruple row down the chamber's length were the serried ranks of a hundred and

twelve long metal troughs. With caught breaths, the terrestrials approached them and stared down into the eternity-lulled faces of the sleepers of Speira.

A sheet of transparent but apparently very thick substance covered each trough or bath. Beneath this, a clear liquid . . . . later they discovered that it was liquefied air . . . . enfolded a stripped and colorless form, snow-pale and yet with no sign of decay about its firm contours and youthfully muscled limbs. For the first time, they realized how beautiful had been this race of the asteroids! The light bodies of the girls had a fairy-like delicacy that the sculptures on the pillars of the great hall had only vaguely indicated. The folded waves of their hair, hair as bronze as the opalescent stone that their race had thought precious, lay in its immemorial sleep across brows of a loveliness that was almost poignant. The austere beauty of the young men's features was molded by a classic regularity that followed a formula unknown and unrelated to earthly conceptions, but nevertheless arresting in its purity of outline. The perfection of an evolution much closer to its ultimate goal than Earth's, held their gaze for uncounted minutes. They saw that this race had been smaller than their own and more harmoniously fashioned; that their feet were extremely narrow and three-toed like a bird's, though as firmly fleshed as a human's. Their two-thumbed hands had a strange grace, even in their folded torpor or death, while something beyond mere loveliness of shape and line informed their tranced unconsciousness, as though the spirit within each form had made itself a sheath of almost transparent beauty, tenuous, airy, yet strong, whose features, beneath their frost-white panoply of death, still held the essence of that challenging hope and unvanquished courage that had set them there as their race's supreme defiance of the power of its cosmic doom.

Nadja hung with bated breath above them.

"How beautiful they were," she said softly.

"How beautiful they *are*," Savary corrected. "And brave as well, to have resigned themselves thus to such a sleep."

"But when you come to the sleeping place of youth . . . . to the tomb of all Speira's hopes . . . . 'know that what you see is not death but the unchanging, ageless, cataleptic state over which the centuries may roll and airless æons pass without taking toll,' " Nadja quoted slowly from the ancient Speiran manuscript. Then she said: "We shall have to pump air down here somehow before we start to wake them."

Savary frowned in thought, looking down at the frozen sleepers over whose faces the soft fluctuations of the eerie light seemed to shed an illusion of breathing life. "I think, after all, that it will be simpler to lift them out of their solution and transport them to the ship. We can bring them out two by two on litters . . . . or better, incased in air-tight shells or cylinders, since who knows how brittle or delicate their bodies may prove to be? After a while . . . . if they revive . . . . the first ones to come to life should be able to lend us a hand with the others. We will begin tomorrow, Nadja."

Saalvor and Ydrissa

● It was the fifth day since the sleepers had been found. Coming to the doorway of the *Victory*, Nadja looked up at the brightening stars. A soft, new dusk was sinking down upon the quickened asteroids. Within the space-ship, ten of the Speiran youths reposed within deep baths of Telzon's life-giving solution. That evening, the first two they had removed from their underground tomb were to receive the final injections that were to bring them completely back to life.

As she drew in deep breaths of the keen thin air, the Earth-girl felt the brief, almost evanescent, caress of the light rain that came now every evening at the setting of the sun on Speira. The radiation of heat from the sun-pelted ground was slower now that the atmospheric insulation was growing every day denser, and the ghostly patter of a long dead element

slowly feeling its way back to life persisted for a half-hour or more each evening before the cooling air changed it to snow. Nadja loved the whispering coming of that reborn rain and lifted her face to it eagerly. Suddenly, she felt a movement, like the stir of a sleeper about to awaken, run through the thin air around her. In the reflection of the sky mirrored in a small pool at her feet, the blur of a trembling ripple obscured and broke the light. There was the whisper of age-old dust scurrying across the meteor-riven rocks, a living breath that passed lightly over the whole small world, as the first breeze of Speira soughed softly through the gathering dusk.

At Nadja's call, Savary came to the doorway of the ship and felt the cool kiss of the stirring wind against his cheek. He smiled up at the darkening sky. "Our asteroid's first wind," he said. "That means that atmospheric conditions are nearly back to normal. Soon we will be having more rain than we want as the river and sea beds receive their waters back from the sky. Happily, it will come as snow for the most part. But come, Nadja, we must wake the inheritors of this reborn world."

Within the laboratory of the ship, the rubber baths in which the two first Speirans they had removed from the underground hall were immersed, waited under a flood of brilliant light. When they had been lifted from the immediately volatilized baths of liquid air in which they had lain for so many countless years, their bodies had been as stiff and brittle as glass. Nadja, brushing a lock of the girl's hair a little roughly with her space-suited hand, had seen it break away in tiny, tinkling fragments like broken crystals; but after this warning, they had expended an infinite amount of care to prevent any serious accidents. Now, touching the arm of the man lightly with one finger, Nadja spoke in a shaken whisper.

"It is soft and yielding."

Savary nodded. In one hand, he held a flagon of the restoring fluid which each of the sleeping figures had held clasped in its hands. He was a little pale. To break the bonds of that æon-old sleep was a task more awesome than any he had yet undertaken. Slowly, with the slender silvery needle poised ready between his fingers, he bent towards the princely form of the man lying in the life-giving fluid before him. . . .

Saalvor, prince of Speira the once-fortunate, felt the hard coercion of light beat against his weighted eyelids. There were voices murmuring near him, but their words were undistinguishable. Somewhere there was the sound of a woman's sob.

He had slept, he thought, and forgotten for a brief moment the horrors that were overwhelming Speira. The counselors of his father had probably given him a drug, for sleep had become a rare thing in the thin air that still clung to the lower depths of the dying planet where the pulse raced and the heart drummed fast although one did not yet gasp and choke as on their world's surface. Now he must awaken and die with his race of the doom that had been set on it before he was born. He would open his eyes and the underground passageways his forebears had built would surround him. The places to which his people . . . . or what was left of their decimated ranks . . . . had fled from the invisible and icy horrors that besieged the surface, so that they might die in dignity, at least, and in peace. He struggled against the weight . . . . heavy as the hand of time . . . . that seemed to lie on his eyelids. Slowly, they fluttered and opened, closed, then opened again.

He was lying on a soft couch in a strange bare place, and two beings such as he had never seen before were bending over him. One of them held a warm and pungent liquor to his lips which he swallowed automatically. There were tears in its eyes and he knew by that sign that it was a woman. The other figure laid a hand reassuringly on his bare shoulder. He spoke in a voice that possessed both power and kindness. "Rest," he said. "Rest and remember. You have been asleep for many thousands of years."

Strange warmths and chills . . . . a

sudden onrush of life, as though long dammed tides were springing forth from their shackles . . . . were coursing through his quickening flesh and wakening the powers of his mind. Memory slowly dawned upon him. He was standing once more in that secret vault beneath the lowest council chamber, his arm around Ydrissa, she who should have been his bride had Speira not been doomed. The picked youths and maidens of his race stood around him; the long coffin-like troughs of green vulcan waited. His own voice drifted back to him across more years than he knew.

"Whether we die now of the doom of our race, or sleep this sleep of the centuries, matters little. One may be no more than another form of death, but if it proves more, we shall have rendered this service at least to our race and to Speira, the once-beautiful."

A youth . . . . hardly more than a boy . . . . had cried out. "But what if we should awaken? Awaken a thousand years from now, perhaps? . . . . alone in a world from which all traces of our people have vanished."

Ydrissa's clear voice had fallen softly and nobly on the silence that followed.

"Our elders have asked this of us. Shall any of us refuse? It is probably no more than another death that we choose, but if we do revive, we shall be the legacy of our people; the victory of our race. Shall we hesitate over the price? . . . . we, its youth, whose hands have been empty in its need?"

● Above him, the voice of the man-figure fell compassionately towards him. "Your mate is waking beside you . . . . she who slept by your side, and whose capro-vial inscription names her a princess of Speira. I am leaving you the manuscript written by your ancient sages, whose wishes we have striven to fulfil. Time has flown by . . . . how vast a stretch we shall never know . . . . and your world has refound its air, is ready once more to support life. Others of your race wait their awakening and we need your help. We are friends who have come from a distant world and who desire Speira's good as much as your wise men did. Now we will leave you to get used to your refound life."

Hours later, the Speiran prince stood by Knute Savary's side in the doorway of the space-ship, watching the slanting beams of the rising sun light up the desolate splendor of his devastated world. Savary had told him the almost unbelievable tale of his coming to Speira and the manner in which he had brought air back to its dead soil. As the terrestrial had expected from the perusal of his people's writings, the Speiran's mind was the keen and lucid and controlled intellect of a member of a highly advanced and developed race. He seemed to understand rapidly the principle of the revitalizing machines, even though its motive power was outside his learning, and his fine knowledge of astronomy made it easy for Savary to place, in his mind, the planet from which these saviors of his world had come. His sleep of centuries had apparently left his body unweakened and vigorous. Once nourished and clad in some of Savary's garments, he had asked to see the other sleepers of his race now waiting their revival on the space-ship. The grave beauty of his face had not changed as he had stood looking down at the snow-white, pulseless bodies of these companions of an infinitely remote day, but some terrible loneliness shadowing the depths of his eyes had made the earth-man lay a hand on his arm and say: "Yours is a vast and lonely task, Prince Saalvor . . . . the reclaiming of this world for your race. But we will help you. All the resources of the *Victory* shall lie at your command, and you and the lady Ydrissa and the youths who lie here may yet learn to be happy even though the world you knew has sunk beneath an ocean of time."

Now, as he watched with a white, still face, the bleak and changed presentment of his world, Saalvor saw Ydrissa leave Nadja's arm at the door of the space-ship and move shakily to his side. Her eyes swept widely over the lunar world just

waking to the day . . . . the world that had been green and marked by cities and streams in her day. His arm encircled her delicate, airy grace. "Ours is a strange destiny Ydrissa, but we must fulfil it," he said. "Our race shall live once more and reclaim its reborn sphere."

Turning to Savary, he held out his hand in imitation of the gesture used by the terrestrials.

"You have done what even the most brilliant scientists of my people . . . . and we had great minds who would have enjoyed meeting yours, O man of this remote day . . . . would have deemed impossible," he said. "You have been generous, indeed, towards the dream of a race that had run its course and vanished before yours, perhaps, had been born. Tomorrow, when I have faced what we have to face with a less shaken mind, I will tell you of the Speira that once was our world, mine and Ydrissa's; our world which we can never again know. Today, your behavior, O earth-man, has shown that you understand what it means to awake out of a seeming death to find that all the world one has known and loved lies around, no more than dust of time. I have no words, so I shall borrow those of the elders of the people I have lost; the words of the message you gave us and which is all that remains of the times from which we come. 'They who sleep the sleep from which there is no awakening shall bless you, O stranger who has restored our race.'"

Savary spoke gravely. "Time will make it easier, Saalvor. When your comrades are awakened, we will clear the dust of ages away from your city so that its ruins may serve you as dwellings till a newer town can be built. Soon the waters will begin to leave the condensing atmosphere to return to their ancient beds. In a few years, you may be able to grow harvests from the reviving ground, for, from the luxuriant vegetation of Reinos, we will be able to bring you the seeds of fruit and grain-plants, and from the rich seas of Marinoe, we can bring you fish for your streams. In the meantime, the stores of the *Victory* are well provisioned enough to feed you for at least a year. If our foods do not suit you, there is always the liquid that nourished your tissues during your return to life, and on which you could probably subsist for many years. Moreover, the inhabitants of Lydda, who are civilized and sympathetic, will probably consent to give us enough of their synthetic foods to carry you through till Speira can feed you. You may be happy enough one day in your new life. At least, it lies not under the shadow of doom as did those last days of your race in the past."

● As he spoke, Speira had turned fully into the arms of the day. To the terrestrials who had lived for so long on the airless world, with its dead, black sky and untempered sun-heat, she seemed fair now and full of promise, with the night frost still gleaming on her meteor-riven rocks and a silvery touch of mistiness rising towards the soft blue sky. But Ydrissa, with a half sob, said, "And that is all that time has left of what was once so fair? Space-seared rocks and plains of powdery dust where once the fields of grain waved greenly to the wooded hillsides! Can that crevassed valley have been our blue sea, Saalvor? And those lumps of sunken metal our great city?"

Nadja flung an arm around the Speiran girl's delicate figure.

"You shall see how quickly it will all be reborn," she cried out pityingly. "We can build solar-power attractors such as we use on earth to stimuate or enrich your fields, bring you soil even from Reinos for your first gardens, and garments and tools from Lydda. The disintegrators of the *Victory* can sweep your city clear of its choking dust. With Knute Savary to help you, you will soon have recovered your world from its long spacial death. There will be green things growing once more and sparkling waters, and birds on the wing before your children are grown to manhood. It is only the first few years that will be hard."

Saalvor took Ydrissa's hand in his and

smiled sternly.

"In any case, we have no time to waste in vain repinings," he said. "We must carry on the task that our race has set us. Tomorrow we will help you to waken our comrades who are still sleeping. Afterwards, we will work, earth-man. This world you have brought to life and we who once possessed it, are yours. You are Speira's rightful ruler. But I have gathered from your words that Speira forms only a part of the dream you cherish, and that you look upon me as my people's chief. If so, remember that I stand second to you and that Speira is always yours, O noble one of a distant world."

Ydrissa added softly: "We know already that your sympathy will help us when the loneliness of beings sundered by the abyss of time from their world and day becomes something more than we could bear alone. In the name of the distant past, we bless you . . . . strangers who have given life back to our world. May your Earth in its need find such as you to repay it for what you have done for ours."

Like a soft echo of her wish, a light breeze whispered gently across the dusty plains, lifted up into the clear azure and scattered the drifting mists into sun-rimmed puffs of cloud before it went on, gathering strength, across the gently stirring world.

(Concluded next month)

Lays Static in Radio to Radium of Moon

(From the New York World-Telegram, Nov. 16, 1933)

Ohio Astronomer Says Lunar Rays from Mineral Penetrate Our Atmosphere Deeply

A new theory that the moon is charged with radium was announced by Dr. Harlan T. Stetson, astronomer of Ohio Wesleyan University, to an amateur astronomers' meeting.

Travelling with the speed of light, these invisible lunar radium rays seem to penetrate deeply into the earth's atmosphere, sufficiently to disturb radio reception in home sets, he said.

The evidence of their existence is found in thousands of radio tests made recently between Chicago and Delaware, Ohio, and in some volcanic deposits just uncovered at Naples, Italy.

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1. Does color exist in the objects we see? (See page 677)
2. What is color-blindness? (See page 677)
3. What is the ether? (See page 706)
4. Who originated the theory of cavities in the ether? (See page 706)
5. How many moons has Jupiter? (See page 737)
6. What is Einstein's theory of the nature of electricity and matter? (See page 744)
7. Who invented the electric arc? (See page 790)
8. How are stars photographed? (See page 790)
9. Where in the world is radium found? (See page 791)
10. What is the function of the cosmic ray "telescope"? (See page 791)

THE SPORE DOOM

by Eando Binder

(Continued from page 697)

He kissed her passionately. "Were you lonely, darling, waiting for me?"

"It was agonizing!" cried the girl. "You've been in the city four long hours. It was eternity to me!"

She gave a shuddery glance in the direction where the tripod-cars had fought like brutal giants of metal. "Police?"

Roy turned sober blue eyes to her face. "No. Vina, I just fought and . . . . and ended the career of Max Spardo!"

The girl gasped, then nodded in understanding. "After all, he is the cause of all our trouble. It is only right that he should die at your hands."

But Roy was fumbling in his belt. Finally he pulled out the three vials of spores. "Thank the Lord they weren't broken in the corridor! Vina, look! With these I can finish my experiments and buy our freedom . . . ."

"And give to humanity its rightful heritage—life on the surface!" said the girl.

Through the magic of a moonlit night, a lone tripod-car picked its way over the mazes of vegetation.

THE END

Electrical Disturbances Apparently of Extra-Terrestrial Origin

by KARL G. JANSKY

(Bell Telephone Laboratories, Inc., New York City)

The Summary of an Extract from a Paper Published in the Proceedings of the Institute of Radio Engineers, October, 1933, Page 1387

Electromagnetic waves of an unknown origin were detected during a series of experiments at high frequencies. Directional records have been taken of these waves for a period of over a year. The data obtained shows that the horizontal component of the direction of arrival changes approximately 360 degrees in about 24 hours in a manner that is accounted for by the daily rotation of the earth. Furthermore, the time at which these waves are at a maximum and the direction from which they come at that time change gradually throughout the year in a way that is accounted for by the rotation of the earth about the sun. These facts lead to the conclusion that the direction of arrival of these waves is fixed in space; i.e., that the waves come from some source outside the solar system.

The data given for the co-ordinates of the region from which the waves seem to come, a right ascension of 18 hours and a declination of −10 degrees.

The electric waves are very weak but steady. They were first discovered in the summer of 1931. The first few observations, by chance, pointed to the sun as the source, but this theory soon had to be abandoned as the direction appeared to change with the time of the year.

Throughout the experiments, the receiving station was tuned to a wavelength of 14.6 metres.

The radio waves appear to come from the approximate direction of Saggitarius in the Milky Way. This is near the point where a line from he sun, through the centre of the galaxy of which the sun is a member, strikes the celestial sphere.

It is also near the point towards which the solar system is moving with respect to the other stars.

— *Contributed by* Benson Herbert

Science Questions and Answers

THIS department is conducted for the benefit all readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

THE ASSOCIATE SCIENCE EDITORS OF WONDER STORIES

are nationally-known educators, who pass upon the scientific principles of all stories.

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Curator, The American Museum of Natural History.
Professor William J. Luyten, Ph. D.
University of Minnesota.

ASTROPHYSICS
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Harvard College Observatory.

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Air Corps Reserve. Professor Aeronautical Engineering, Iowa State College.
Professor Earl D. Hay, S.B., M.S., M.E.
Head Department Mechanical and Industrial Engineering and Professor of Aeronautics, University of Kansas.
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Professor A. L. Foley
University of Maine.

PSYCHOLOGY
Dr. Marjorie E. Babcock
Acting Director, Psychological Clinic, University of Hawaii.

ZOOLOGY
Dr. Joseph S. Yoshioka
Yale University.

The Electric Arc

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have heard so much about the electric arc, I would like to know who invented it, and just what it is.

WALTER NORLOFF,
Springfield, Mass.

(Sir Humphrey Davy discovered the electric arc while experimenting with an extremely high-voltage battery [2000 plates] in the Royal Institute of London. He noticed that when he drew the ends of the wires apart, more than one spark jumped from one terminal to the other, and both terminals became very hot. He experimented further, and learned that, when they were made of carbon, they produced a brilliant white light. The positive pole wore away rapidly, because its carbon particles jumped across the gap to the negative pole. When the carbon rods of the electric arc are placed horizontally, the curved flame resembles an "arc." Davy is directly responsible for our modern electric furnace and our arc-lamps.—EDITOR.)

Mercury (the Element)

Editor, SCIENCE QUESTIONS AND ANSWERS:

Are the elements directly on either side of mercury in the atomic scale also heavy liquids? What is the atomic weight of mercury?

EDNA F. STOKES,
Bangor, Maine.

(The element on either side of mercury, according to the atomic numbers, is a metal, solid at ordinary temperatures. Mercury has an atomic weight of 200.60; gold, just below mercury, 197.20; and thallium, just above, 204.39.—EDITOR.)

Galaxies and Universes

Editor, SCIENCE QUESTIONS AND ANSWERS:

Which is the greater, a galaxy or a universe?

GUNNAR G. GUDMUNDSON,
South Bend, Indiana.

(Both "universes" and "galaxies" are great conglomerate collections of stars and star-clusters, nebulae and other celestial manifestations. Which is larger is a matter of definition. It is common to speak of everything in existence as The Universe—although astronomers often call it the Cosmos. There is one theory that our own immediate star-group, which is supposed to be disc-shaped with a thick center thinning out toward the ends, is an "island universe": several of which make up a galaxy. Several galaxies make up a great or mega-galaxy; and so on, until we have the Cosmos. To quote from Eddington's "Expanding Universe": "A hundred thousand million stars make one galaxy: a hundred thousand million galaxies make one Universe."—EDITOR.)

Star Photography

Editor, SCIENCE QUESTIONS AND ANSWERS:

How are stars photographed? What was the first star photographed?

BERNARD LIPTON,
New Orleans, La.

(The principle of star photography is very simple. The eyepiece of the telescope is removed and in its place is put a holder containing the photographic plate, which is exposed to the light of the stars. The longer the plate is exposed, the more stars will be photographed on the plate. Vega was the first star successfully photographed, about 1850.—EDITOR.)

Photosynthesis

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have heard of the marvelous action of Chlorophyll in green plants—how it manufactures food through photosynthesis—making food from the action of sunlight on several elements. The process seems so simple. Scientists know exactly how the whole thing works. Why can't they duplicate the act and produce these same compounds that the green plant does? I should think it would be very profitable.

C. GORDON SMITH.
South Amboy, N. J.

(Duplicating the process of photosynthesis can be compared to manufacturing diamonds. The finished product may have greater value than the elements used, but cost of production must be taken into consideration. These processes have both been duplicated, though on a small scale; but the cost of the experiment is many times greater than the value of the finished products. —EDITOR.)

ent, it is also found in the Congo and northern Canada. It is probably widely distributed over the earth, but very scantily.—EDITOR.)

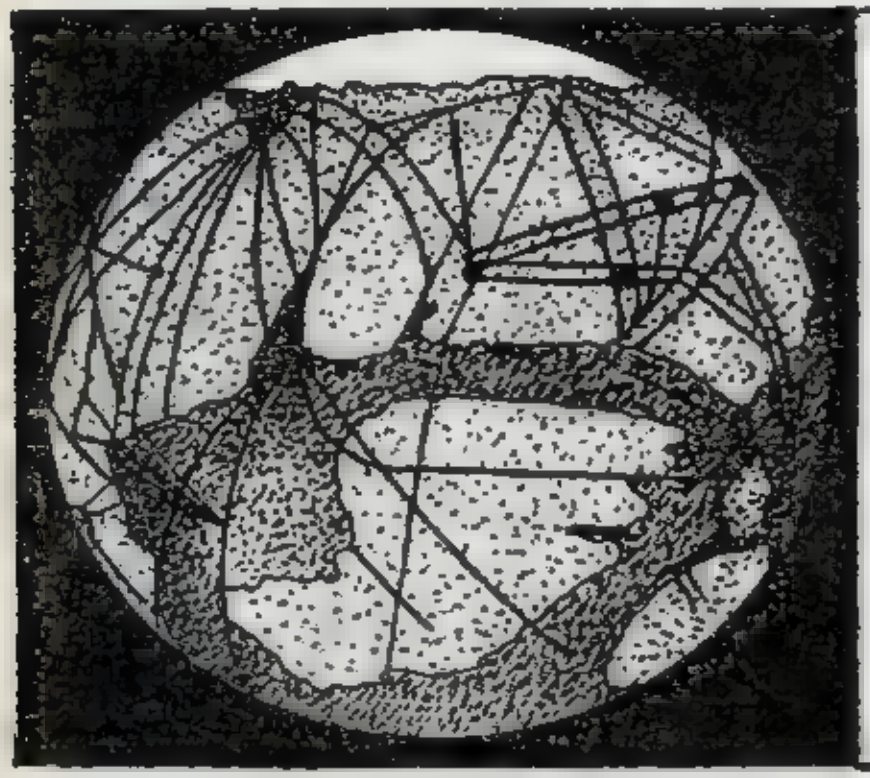
Photographing the Electron

Editor, SCIENCE QUESTIONS AND ANSWERS:

Would you please tell me if the electron has ever been photographed?

WILLIAM BIRD,
London, Canada.

(Electrons have never been photographed, but certain scratches on plates are supposed to represent the paths or "swathes" of electrons. Their existence is taken for granted by scientists, and their description is based on theory. No one has ever seen an electron; but certain rays and vibrations have produced such peculiarities in connection with matter, that physicists are fairly certain of their existence. The atom, composed of electrons and protons, is the smallest particle of matter of any element.—EDITOR.)



This drawing is from a photograph made at the Flagstaff Observatory in Arizona. It is greatly enlarged from the original and the lines represent an exaggeration of the canals. In the original photograph, the ice-cap is at the bottom. Through the telescopes, all objects are turned upside-down. We have inverted it, however, in order to show the northern cap in its rightful place. The two caps are not in existence at the same time. When the southern one forms, the northern melts. It is supposed that the water from them runs via the canals to be used as irrigation for the vegetation in the dark areas. Of course, this theory is rather far-fetched, but none as yet can disprove it.

Moons, Mars, and Radium

Editor, SCIENCE QUESTIONS AND ANSWERS:

Will you please answer the following?

1. How many moons have Jupiter and Saturn?
2. Show the canals, deserts, etc., on a map of Mars.
3. Where is radium found?

MEYER CHENDAL,
(Address Missing)

(1. So far, nine moons of Jupiter have been discovered, and ten of Saturn. Jupiter's four largest moons, in order of size, are Callisto, Ganymede, Io and Europa; the names are seldom used now. The other five are very small in comparison. Callisto and Ganymede are larger than the planet Mercury, yet very tiny alongside of Jupiter, the greatest planet in the solar system. There is a peculiar fact about the satellites of Saturn. The outermost one, the ninth from the planet, revolves in the retrograde direction, opposite to the others.

2. You will find on this page, a map of Mars, showing the canals, deserts, and polar "ice-caps."

3. Radium was discovered in Bohemian ores. At pres-

Cosmic Rays

Editor, SCIENCE QUESTIONS AND ANSWERS:

How is the energy produced by cosmic rays measured? I have heard that cosmic rays are so penetrative that they go through nine feet of lead. If they are so powerful, why isn't their power utilized?

JAMES TAYLOR,
Nashville, Tenn.

The instrument used to measure the power or energy of the cosmic ray is the cosmic ray "telescope." This instrument is described in the April, 1932 issue of our sister magazine "Everyday Science and Mechanics." Scientists have not as yet learned to harness the ray —they do not even know just what it is. It is believed to be composed mostly of "photons," with a number of "corpuscles"—that is, both waves and electrically-charged particles. It cannot be directly photographed like X-rays. Its presence is known by invisible manifestations; it has caused air in a sealed chamber to become conductive.—EDITOR.)

IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good, old-fashioned brickbat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps, to cover time and postage, is remitted.

An Author's View of Science-Fiction

Editor, WONDER STORIES:

I have just finished reading the December issue of WONDER STORIES, which I enjoyed very much. Sidney Patzer's polished style of writing evokes my highest admiration, and I thoroughly enjoyed "The Lunar Consul." To my mind, that story would make a thrilling mystery drama film of science-fiction. It does not tax the incredulity, and it holds the reader in suspense until the final climax.

I am doubly glad to see the return of Arthur K. Barnes with "The Mole-Men of Mercury." John Beynon Harris writes an interesting story, but personally I prefer "Spheres of Death" in the issue of a few months ago to "Invisible Monsters."

One thing I always notice about stories by new writers. They always bring "something new." Otherwise they would never be accepted from a large offering of manuscripts such as you must have. "The Inquisition of 6061" by A. F. Jones and "The Heat Destroyers" by Clifton Bryan Kruse illustrate this fully—ingenious ideas underlie each. I would be glad to see more of them in forthcoming issues. I'll skip criticism of the new serial for very obvious reasons.

I once won a prize in your magazine for a letter revealing "What Science-Fiction Means to Me." I was thoroughly sincere when I penned my letter, but I had never expected to win first prize. And even now, Science-Fiction means as much to me as it did that day years back when I sighted the picture of a submarine, and a dragon climbing up its side from out of the depths, upon the back of an unknown magazine. On the submarine's prow were the magic numerals "S38," and I instantly knew that it was a picture portraying "The Land That Time Forgot" by Edgar Rice Burroughs, which I had read, or rather devoured, as the literary term goes, some time before. I bought the magazine at once, reread the story, and with bated breath feasted on stories and visions and dreams of the like I had never known existed.

A new world—an utterly new world—lay before me. I seemed to be standing in a world of darkness and gazing up through gigantic pillars into a new domain of blinding light. And the visions I beheld through this gate to a new, magnificent world were limned with the golden tints of stimulated imagination. Pictures strange and wonderful, rich with the flashing colors of unlimited fancy, and golden dreams of a new dawning of the golden future were conveyed to me. It was a blazing torch leading into the dark worlds and yawning, unplumbed chasms of ignorance, blazing the trail for men to follow.

Yes, I know it was all a foolish youthful dream, and yet today it is just as clearly revealed and real as it was then. Science-Fiction became to me an ideal, something priceless beyond powers or riches, something beyond the sordid world and its monotonous realities. A golden gate to a new Utopian domain, it lay stretched before my inspired vision. And it was a vision which the hardships of the world and the trials of life could never take from me.

Science-Fiction will always remain to me an Ideal. As you are aware, I am, in my own meager way, an author of Science-Fiction. Whether my stories are good or bad, I shall always be proud that some few of them merited the standards of "our" magazine, which I think is leading its field. Whether they are received agreeably by your readers or not, I shall always feel that I have, in some way, contributed my bit to my Ideal, Science-Fiction. My stories are written with that thought, to do their small part in shaping the mighty edifice of Science-Fiction which is growing year by year into a glorious future where it will be recognized by one and all as a "glowing torch leading from the dark fields of ignorance."

If I have displayed any sentimentality, I am unashamed of it. In ending, I would like to request that you encourage young writers such as Frank K. Kelly and Mortimer Weisinger.

J. HARVEY HAGGARD,
San Bernardino, Calif.

(This is a very human letter from one of our authors. It is certainly a vivid portrayal of the "deathless realm of fantasy." Mr. Haggard is not only one of our favorite writers, but an active fan also. We agree with you when you state that you are doing your part to advance science-fiction.

We are glad that our readers noticed the newness of the stories we publish, written by authors new in the field. Each one of these writers has a different style, different technique, and different natural resources (plot-ideas). This makes their tales refreshing.—EDITOR.)

Science Wonder *Not* the Best

Editor, WONDER STORIES:

I admit that I was mistaken in my letter in the December issue, when I stated that the old SCIENCE WONDER was much better than the present WONDER STORIES. After I read your comment, I went immediately to the bookcase and extracted the first copy of SCIENCE and AIR WONDER, and the first number of each volume since, and the December number. Placing them on the desk in order, I stood back and surveyed them carefully. I still hold that the cover on the June, 1929, issue of SCIENCE WONDER is the best, but when I looked through each story in each issue, and tried to remember each story, I came to the immediate conclusion that the later issues are really the best.

There is really not much to say about the December issue. It is fine, and I am satisfied. Paul's covers are attractive, and portray the true contents of the magazine.

Lumen Winter is an excellent pen artist. He has fine technique, and his pictures show an originality and action. His illustration for "The Man with X-ray Eyes" was very good. His drawing for "The Inquisition of 6061" was good—but I absolutely did *not* like the story. It was the *only* blot in the issue.

I am glad to see a list of forthcoming stories. Keep this up.

And—*what a story*—"The Lunar Consul" turned out to be—a whiz of a narrative. I certainly enjoyed *this story*. More from Sidney Patzer.

I agree with Messrs. Perry and Rogers in the fact that Paul's futuristic men look like flabbergasted carbon copies of boy scouts, and that "The Time Stream" was about as clear as the proverbial primordial slime, but I do *not* agree with them when they kick Clark Ashton Smith in the face, call him an addict, and call his *excellent* stories imbecilic drivel. Smith has the ability of making you *live* his narratives, instead of just reading them. He puts *action*, suspense, and realism in his stories that few authors can duplicate. His "Beyond the Singing Flame" was a story that deserves your pansies, instead of the mud you sling at him. (No hurt feelings, please.)

Milton S. Rothman clamors for Edward E. Smith, Ph.D. Add my clamor. A story by that genius would certainly give ol' WONDER STORIES a boost. I'd like to see what Dr. Smith looks like—but—I forgot, you don't insert the author's picture any more. ('Tis a shame. It was an asset to the appearance.) Nevertheless, we can still stand a story by said Dr. Smith.

Lewis Lane contributes his theory of the destruction, etc., of Mu and Atlantis. The best theory that I have ever read was in the August, 1928, issue of SCIENCE AND INVENTION, under the title, "The Riddle of Atlantis," by Hanns Fisher. Mr. Fisher's proposition was indeed very plausible. Perhaps Mr. Lane would be interested.

LEWIS F. TORRANCE,
Winfield, Kansas.

(So! We have convinced you that the latest issues of WONDER STORIES are superior to the old SCIENCE WONDER! And you will find future issues of even greater merit. We would be derelict in our duty if our magazine was not constantly improving. Perhaps you like the cover of the very first issue best because it is somewhat "subdued," but we have learned that "flashy" covers are necessary in order to promote news-stand sales.

You will notice that much of the figure work is given to Winter, and you will not be annoyed by quite so much of Paul's "flabbergasted carbon copies of boy scouts."

We believe that any one who can enjoy the beautiful tales of Clark Ashton Smith can really appreciate fantastic literature. Those that class his material as "imbecilic drivel" have a sad lack of imagination.

We do not publish the sketches of our authors any more with their stories upon request of the authors themselves.—EDITOR.)

The December Issue

Editor, WONDER STORIES:

"Evolution Satellite," by J. Harvey Haggard, is the most interesting story in the December WONDER STORIES. Since it is just a novelette, I wish it could have been published complete.

"The Lunar Consul," ended fine. Was I surprised though! "The Mole-Men of Mercury" is third best. This is followed by "Invisible Monsters," "The Heat Destroyers," and "The Inquisition of 6061."

Is the author of "Hicks Inventions With a Kick" stories still writing? If so, let's have some in our magazine. What has happened to Hari Vincent and D. H. Keller, M.D.? Those two authors are always good.

I don't care for your new artists. Paul and Wesso are the ones to use. I hope that Paul visited *A CENTURY OF PROGRESS* as he should get plenty of new ideas there.

I hope you will be able to increase the number of pages soon, as the magazine can be read in too short a time now.

JACK DARROW,
Chicago, Ill.

("Evolution Satellite" was published in two parts as a recent decision. We decided to include the first part of the next serial in the same issue with the last part of the previous one. You will notice this from now on.

You don't mean to say that you don't like Winter's work, do you? This is surprising. Most of our readers have written in praising his work very highly, some even putting him on a par with Paul. But it's all a matter of personal taste.—EDITOR.)

"The Master Maniac"

Editor, WONDER STORIES:

I won't kick about the new—or rather old—size of our mag, as I know it won't do any good, but I do believe that those irregularly cut pages could be easily and inexpensively remedied. I've done some work in the past in both the editorial and mechanical lines of publishing and have a slight idea of what I'm talking about. Those pages are an awful nuisance, especially when a story is run over to the end of the mag. Of course, after some time, I suppose it would be possible to memorize which is which of the pages by looking at them, as, for instance, the section from page 369 to 380 sticks out much farther than from 381 to 388 . . .

About our old stand-by, "The Master Maniac"—while he's working on this intergalactic recovery act, which, by the way, certainly ought to have a campaign manager, as hardly any one knows as much about it as the relatively tiny NRA, don't you think he could spare some time to see that Newton's Law of Gravitation is also repealed? We don't exactly need his help, but it would make us feel a lot safer. Intended to send him a note by the last express bound for Canis Major, as I hear he was in the dog-house, but couldn't find his address.

Yours till Dr. Snooks digs up old Doctor Hackensaw, marooned out in space on some asteroid, and gets him to tell some more of his secrets.

D. H. GAMMA,
Los Angeles, Calif.

(You are mistaken when you say that the unevenly cut edges of our pages could inexpensively be remedied. It is a very costly process. We can only act upon this suggestion when circulation warrants it.

After Dr. Snooks has repealed the Law of Inverse Squares, he might now consider the Law of Gravitation, as you mention, and perhaps a few more of the Laws of Nature. We believe that he had a lot to do with the repealing of the Law of Prohibition, but, being a modest man, he would not allow his name to appear in the papers.—EDITOR.)

A Word From the BSFA

Editor, WONDER STORIES:

Having thoroughly digested the March issue, I conclude that the change in size and weight and price is the best thing that could have happened. When WONDER STORIES was struggling to maintain its old size, it had to fill up the odd spaces with tripe: that is where the "biological monstrosities" and insect plagues crawled. Now the need for such trash has passed and we can look forward to reading only real science-fiction in the columns of our old friend.

Six months of the new style cannot bring forth one really serious criticism from any of our members, though, of course, tastes are bound to differ in nearly every case. Each issue has presented a good variety of themes, and, even where the theme is duplicated, the treatment has been vastly different. It is true there has been a preponderance of interplanetary stories, but these have always been acceptable and have never degenerated to the merely sensational.

A vote of the Association places the following stories in their order of popularity:

"The Venus Germ." If it is necessary to have interplanetary wars, then Messrs. Starzl and Pragnell seem to have solved the difficulty in a most absorbing way.

"The Wreck of the Asteroid." In our opinion the best interplanetary serial of 1932.

"Wanderers of Time." Trite to say it is different from the run of time travels, but it is!

Paul gets better in every issue. We take back all we said a long time ago about possible stereotyping. With Paul it is impossible. Personally, I consider his cover illustration for the March number superb.

The C. A. Smith vs. P. S. Miller controversy has aroused great interest among your readers in the Association. The general idea over here seems to be:

"Fantasy or Pure Science, let 'em all come. But don't attempt to camouflage either way. Mr. Smith was at his best when he wrote the 'Singing Flame' stories, and they were undoubtedly fantasy. But if he had tried to suggest that the science contained therein materially added to the interest he would have been quite wrong. Read as fantasies, Mr. Smith's stories are wonderful. Treat them as having a real scientific basis and they flop.

"In direct contrast, Mr. Miller writes 'Tetrahedra of Space' in the same issue. The idea of a crystalline life may be weird, but Mr. Miller's explanations forbid the use of the word fantastic. He gives us nothing that we cannot understand, at least dimly, whereas Mr. Smith writes of those things that no man can readily perceive.

"Each in its way is splendid literature, but to attempt to disguise one with the cloak of the other would rob both types of their charm."

Probably 99% of the other readers have reached the same decision in fewer words, but that is how we feel about it!

Incidentally, "Brood of Hellos" was the only mixture that I managed to swallow, and even that gave me some anxious moments.

Just one sentence about the Association. It is

(Continued on page 794)

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THE READER SPEAKS

(Continued from page 791)

progressing very satisfactorily, has hopes of carrying on even more satisfactorily, and please will the aforementioned 99% of your readers make a note of our address and new name!

Thank you.

The British Science-Fiction Association
P. Enever, *Hon. Secretary*
"Rosemead"
High Road, Hayes
Middlesex, England.

(We hope that this letter secures many new members for you among our English readers.

It is gratifying to us to learn that Wonder Stories has made such a "hit" with your members, and that they have no unfavorable criticisms of the magazine.

Mr. Miller's crystalline life is certainly fantastic, although logical. Mr. Smith has written some excellent pieces of science-fiction that contain plenty of science as well as story interest.—EDITOR.)

An Advocate of Dress Reform

Editor, Wonder Stories:

I have often noticed how writers in W. S. have used as a basis for their stories the ideals and interests I have in life, i.e. dress reform, health and physical culture, technocracy, socialism, esperanto, and last but not least, the wonders of future science; and I believe that most readers do not object to their use in stories, realizing the necessity of them for future world happiness. So I would like to say in answer to the letter of Mr. Bailey that the use of the policy "Ambition to get there," has resulted in the present world chaos, and under this system is of no use to the millions of unemployed. I am in full agreement with your reply to him anyway. W. S. has filled a gap which I have been hoping to fill for years, and if I tried to describe the pleasures it gives me, I'd have to send this by parcel post. I always turn first to "The Reader Speaks." The editorial is always interesting. Schachner, Keller and Manning are among my favorites. Re letter of Baron von E.S. No. 1, Not so bad. 2, Laughable. 3, Include such plots but spread out more. 4, 'Ear, 'ear. 5, Don't. 6, Only a little. 7, Ditto. 8, —. 9, Necessary evils to you. 10, Do!

I have to laugh at some people who insist on proving the impossibility of time-travel. Aren't they really clever? But in spite of them, time-travel holds it own, as the foundations of a clever and interesting story.

Best wishes.

James Playsin,
Manchester, England.

(This should prove an interesting age to one who is so interested in dress reform—considering the rapidly changing fashions in women's wear. Of course, the Nudists carry this idea of dress reform a little too far, although the movement is gaining. Physicians have always advised the use of loose clothing to allow air to circulate around the body.

We agree with you that time-travel makes a good subject for science fiction stories, even with all its seeming improbability.—EDITOR.)

An Appreciative Reader

Editor, Wonder Stories:

It was with surprising, stupendous, unadulterated joy that I glanced through the pages of the November issue of Wonder Stories. Such a complete change from a cheap, tawdry-looking magazine to a good, snappy, interesting periodical in one month prompted me, though a constant reader for three years, to write for the first time complimenting you upon the immense improvement shown by this issue. Being a printer by vocation, although only seventeen years of age, it does my artistic sense a world of good to see the return of the small size, the old illustration on the contents page, the good typographical layouts on the editorial and facing pages, and numerous other small details.

I notice with heartfelt thanks that you have adopted J. R. Ayce's idea of having several artists' illustrations in the issue. The evident success of this plan is proven by the excellent drawing of Winter's in the "Man With the X-Ray Eyes." Paul, seemingly spurred by Ayce's goad, did exceptionally good work on the cover for the "Call of the Mech-Men," and in the illustration for the "Lunar Consul." The stories I find, as a whole, somewhat shorter, but more numerous and interesting.

It is with tears in my eyes that I hope, beg and pray that the present system of publishing the magazine is carried out for good. I am taking J. S. Nixon's hint and picking the best stories, am binding them under a separate cover, but find to my dismay that due to the idiotic conventions of the past year or so, almost every issue is of varying thickness, texture of paper, etc., and have half a mind to throw the whole kabodle of large-size issues out. To be successful, a periodical should have a standard size and thickness.

One more brickbat. On the contents page it states that a subscription for one year is $2.50 for 12 issues a year. This year two double issues were published, and of the same quality. Really ten issues a year. What is the answer?

Nevertheless, taking all in all, I bless the lucky day I first purchased WONDER STORIES; exactly three years ago. May good luck and equally good stories make your mag the best of its kind.

From an ardent science-fiction fan,

ROBERT K. PHINNEY,
Dorchester, Mass.

(It seems as though most of our readers saw an improvement in our November issue over previous ones. Our new policy is working. We take pride in the set-up of the magazine, and you find it exceedingly difficult to find any typographical errors. We are glad you like artist Winter. He has been put on our art staff permanently due to the wishes of the readers.

"Variety is the spice of life"—and perhaps that is one of the thoughts that we had in mind when we changed the magazine every so often. It seems to keep the readers' interest. Even though you object to this, it can be seen by your first paragraph that it has had its good effects upon you. If the November issue had been of the large size without a physical change from the October, you might not have liked the stories so well, strange as it seems. However, there appears to be no doubt that the quality of material in the November number was superior.

Our $2.50 subscription is for twelve issues, even though only ten have appeared this past year, and the subscribers' list will be extended two months so that they get their full value.

Thank you for your good wishes.—EDITOR.)

A Word from England

Editor, WONDER STORIES:

I wish to congratulate you for changing back to the smaller size. I have always preferred it myself. I am pleased that you did not run a serial between the changes of size, as you did when you changed size before, and that you have gone back to the old picture of the woman transporting people to other worlds. Another point on the contents page is the missing out of those broken phrases and comments. Could you not tell us somewhere what to expect next month? You know, there is such a thing as pleasure in anticipation from the title.

The stories were fair, but "The Tomb from Beyond" did not belong in the magazine.

Have you changed your print? It seems smaller and blacker than before.

PHILIP S. HETHERINGTON,
Cumberland, England.

(We are surprised that so many have written in to us to mention that they were glad to see the illustration re-appear on the contents page. It must have some psychological effect on the science-fiction mind!

We had thought it best to omit the broken phrases which appeared on the contents page, chiefly because they take up too much room. You will notice that we usually announce a few of the stories to be published

(Continued on page 798)

At Last! Secrets of Sex and Marriage Revealed

From a Doctor's Private Office!

The answers to questions you would like to ask your own doctor and DARE not. The RIGHT methods to follow for sane sex experiences—marriage that will remain a lasting honeymoon—a love life that will grow more complete with the years, unfettered by doubts and fears.

THOUSANDS of books on sex and marriage have been written — but hardly one more outspoken, and yet still tenderly sincere. "Sex and Marriage," by E. J. Lambert, M. D.—just published—wipes out all the dirty sentiment and misinformation and reveals sex and love for what they REALLY are. This brand new book fearlessly tells you everything you should know about your desires.

Is ignorance or false modesty robbing you of the joys of normal sex relationship? Do you want the NAKED TRUTH? Knowledge [illegible] and correcte missteps.

Only a Doctor Can Tell All

Here are answers to problems only hinted at by others. "Sex and Marriage" contains true stories of lives made wretched because they didn't know. Shows what happens when you disobey Nature's laws. Explains every unescapable perplexity—from the awakening of the sex urge to life's harvest period. Thirty-two fascinating chapters! Each covering a different phase of sex and marriage. Here are a few subjects treated: Why Sexual Knowledge Should Be Told; Structure and Use of the Reproductive Organs; Is Continence Harmful; True Love versus Sensual Love; Mistakes of the Bridegroom; Immorality in Marriage; Birth Control; Sterility and Frigidity; Self-Abuse; Prostitution; Venereal Diseases. 250 pages, vividly illustrated with anatomical charts. You simply must examine the book!

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Please send me one of your FREE policies to look over.

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City ..... State .....

Fill in this coupon and mail today!

THE READER SPEAKS

(Continued from page 795)

in forthcoming issues. It is not advisable any longer to announce stories for the next immediate issue, for some of them are likely to be crowded out at the last minute.

We do not know what you mean when you say that "The Tomb From Beyond" did not belong in the magazine. Mr. Jacobi's stories contain a weird atmosphere, but there was nothing occult or mystic in the "Tomb" that cannot be explained by science.

The text of the stories is in the same type as the large issues.—EDITOR.)

The November Issue

Editor, Wonder Stories:

A shrill, mounting whine—a blinding flash—a deafening report! What caused it? Why, the November issue of course. Boy, that was the best issue of Wonder Stories I ever read, bar none. First, the small size is back. Second, a story by that author of authors, Edmond Hamilton. "The Man With X-Ray Eyes" was superb. The only thing wrong is that if he could only see organic matter, how could he tell where his apartment house was?

Next comes the "End of Tyme." That was almost as good as Eppie T. Snooks' tales. By the way, when do we get another of his masterpieces?

"The Call of the Mech-Men" was fair, as was "Through the Einstein line." "Death Between the Planets" and "The Tomb from Beyond" didn't appeal to me. I'm not going to comment on "The Lunar Consul" until I get the whole thing.

I see you've got a couple of new artists. Hang on to them, especially Winter. His work is the most life-like I've seen.

Well, there are only a few more things I want to say. When are you going to have another Science Fiction Week?

And now, *kun miaj bondeziroj*, as we say in Esperanto.

Joseph Dockweiler, Jr.
Queens Village, N. Y.

(We are glad you are pleased with the November issue. You, like the majority of our readers, prefer the small size.

In Mr. Hamilton's story, the news reporter found his apartment house in the same manner he located everything else—by the organic matter within, which he could see. He could probably have located it even without this aid, as he must have been familiar with the section of the city in which he lived.

Many of our readers would like to read more stories by Epaminondas T. Snooks, D. T. G., and we are trying earnestly at the present time to get in touch with his Keepers.

We are convinced by your letter, and many others we have received, that our new artist, Winter, has been favorably received by our readers, and he will illustrate the magazine in the future with Paul.

Science Fiction Week did not seem to go over so well when we sponsored it in 1930. Why must science-fiction fans set a week aside each year to spread the "gospel," anyway? The enthusiastic fan will boost it every day in the year, whenever he is given the opportunity. We publish letters from organizations devoted to science-fiction, in order that they may secure new members.—EDITOR.)

Science in the Stories

Editor, Wonder Stories:

The "Horrid" Baron von Elmer Schnopsvitch expressed my sentiments exactly. Paul is an artist, that I can see, but, as in "The Fatal Equation" he gave the men all the appearance of crooners! "Was you dare Sharlie"?

I appreciate the fact that with too much science your subscriptions would fall off, but why not put in at least one good *science* story. Yes, I said science. Is that word so strange to you? Also if it isn't asking too much, would you mind keeping out all those lurid stories?

Looking over the ads makes one think that the advertiser expects readers with very poor taste. The only good ads are your own. Yes, I am beginning to think that I'm not reading the kind of literature that does me any good.

So, a reader that is slowly becoming disgusted says —Oo wah!

NICHOLAS J. HOCK.
Newark, N. J.

(You complain about Paul's lack of ability to draw people properly. You will notice that Winter is now doing most of the figure work, and most of our readers seem to appreciate his ability. Of course, we shall still let Paul draw his imaginative illustrations of alien monsters, space-ships, and other futuristic and fantastic subjects, including the cover picture. Our readers are almost unanimous in the opinion that no one can rival him in this kind of work.

We believe that we have mentioned several times before that science-fiction evolves. We conform to the wishes of the majority of our fans in selecting material for publication in WONDER STORIES. When we receive several letters all condemning a certain story, we know enough not to force others of the same type on our readers. Undoubtedly, if we took a vote on whether stories should be loaded with scientific discussion or not, all of our scientifically inclined friends would vote an enthusiastic affirmative, and those of our readers, the greater part, who read our magazine for its stimulation to their imagination and the broadening of their minds, would vote a negative quite as enthusiastic. Our stories give the reader a broad and general understanding of this universe and how it might be, and that is all we attempt to do. Our stories have encouraged young scientific experimenters, and have given many others an interest in science that they did not have previously.—EDITOR.)

American Interplanetary Society

Editor, WONDER STORIES:

Have become an ardent reader of your imaginative magazine since discovering it at the newsstand. Your articles and stories on space-travel fascinate me most and I've come to wonder what science is doing behind the scenes today to achieve travel across space. That I read your mag regularly is full testimony of my regard for it.

My special purpose for writing you, though, is to ask you for advice as to how I can learn of all the theories and experiments existing at present on ways and means of space travel and the development of experimental rockets in America and Germany.

If you please, I should like to know the answers to the following questions:

1. Addresses of American and German Interplanetary Societies.

2. How to locate all books and feature articles on theory of rockets and space-travel.

3. Does the American Interplanetary Society publish a magazine?

If you will be so kind as to furnish me the above information to start research on, I shall be very grateful, indeed; and I shall boost your mag whenever I have opportunity.

DON CANNON,
Cuyahoga Falls, Ohio.

(You can communicate with the secretary of the American Interplanetary Society, Dr. Samuel Lichtenstein, at their headquarters, 174 West 86th Street, New York City. They will probably give you details as to the functions of the Society, and inform you about books and articles on the subject. At the present time, they publish no magazine. There is also a German Society in Berlin.—EDITOR.)

A Sequel-Seeker

Editor, WONDER STORIES:

Here is a mild sort of complaint for you to think over; I trust it will make you mend your ways. Also, in case this reaches the readers' column, I hope it stirs some of the authors mentioned out of their lethargy.

(Continued on page 798)

Sane Sex Life

By Dr. H. W. Long

A frank and straightforward discussion of the most intimate details of marriage with complete explanation of the art and practice of love.

Read This Remarkable Table of Contents

Special introduction by Dr. W. F. Robie, celebrated author of "The Art of Love."

"A book to be of use, must be very plain in its language and ignore no details." The only modern book I know which attempts this is "Sane Sex Life and Sane Sex Living." Dr. Long's book is written for married couples and gives such practical and definite information that no one after reading it can be ignorant of the nature of the sex-act, or fail to know exactly how it should be performed.

Importance of sex—wrong attitude toward sex matters—sex and fear—right attitude—telling the truth. Sex knowledge being given to all people—prudery and selfishness—a new era is coming—growing demand for knowledge.

Duty of newlyweds—innocence and ignorance—purity and fullness—getting the correct mental attitude

Description of male sex organs and their appearance—description of female sex organs and their appearance.

Purpose of sex organs—man's part and woman's part—difference between animals and human beings in use of sex organs—legal rights of husbands a sin in marriage—husband's and wife's attitude—wrongful advice to bride chastity vs. passion—love, the teacher—the right way to happiness.

The four periods of the sex-act—dangers of haste, dangers of "let-down" to husband and wife—being lovers after marriage—positions—the climax—false ideals of pregnancy—remedies of sex-act—perfect accomplishment as art.

How to go about the first meeting—delay beneficial to virgin brides—having children when wanted the wife's rights in this matter—discovery of "Free Time" and its importance.

Mismatching and its dangers—how to avoid them—new positions—overcoming difference of time in climax by wife and husband—mutual delight—teaching the future bride.

"Reservatus," what it means and how it benefits—the complete sexual Kiss—frequency the "cold" woman—the impotent husband—loving to the end.

Importance of cleanliness on part of both man and wife—the secret of success. The best time to have children—making a home—coitus during pregnancy — fear of pregnancy.

This Once Forbidden Knowledge Is Now Available to the General Public—COMPLETE AND UNEXPURGATED.

"Sane Sex Life and Sane Sex Living" has received the enthusiastic approval of thousands of doctors, and tens of thousands of married people because it tells the things that all men and women want to know, in language that everybody can understand and learn to use. Mail the coupon now and get a copy of the AUTHORIZED, UNEXPURGATED EDITION—now reduced to only $3.15.

Mail This Coupon Today!

BRENPARK COMPANY, Dept. WS-234
245 Greenwich St., New York, N. Y.

Enclosed is my remittance for $3.15, for which please send me prepaid, in plain wrapper, a copy of the complete Authorized Unexpurgated edition of "Sane Sex Life and Sane Sex Living" by Dr. H. W. Long.

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Get a copy of SEXOLOGY on any newsstand, or if your dealer cannot supply you, send 25c in stamps for a copy of the current issue.

SEXOLOGY 25T West Broadway New York, N.Y.

CLASSIFIED ADVERTISEMENTS

Advertisements in this section are inserted at the cost of ten cents per word for each insertion—name, initial and address each count as one word. Cash should accompany all classified advertisements unless placed by a recognized advertising agency. No less than ten words are accepted. Advertising for March, 1934, issue should be received not later than January 6.

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THE READER SPEAKS

(Continued from page 797)

One of the most excellent ways of maintaining reader interest, and thus promoting sales, is by running a series of stories about the same character or group of characters, or a series unified in some manner similar to that. The series, as a method of presentation, has, it seems to me, all the desirable points of the continued story, and none of its obvious defects. The success of Mr. Schachner and Mr. Manning in recent issues will bear out my assertion of their popularity. So why not more? Not that we want W.S. to have nothing but series, but I see no valid objection to running one every now and then.

Not much of a complaint so far, you'll be thinking. If all complaints were like this, editing a magazine might almost be enjoyable. But wait. Messrs. Schachner and Manning are not the first in the august pages of W.S. to get the idea of a series of shorts. Not at all. A year or two back A. K. Barnes wrote a couple or three nice yarns about his scientific reporter, Darrell, then dropped them abruptly. Why? Let's have a repeat. Again, F. S. Miller gave us a story or two about the inimitable Lem Gulliver, then left the poor soul a "wanderer of the space-lanes." Let's have a repeat on him, too. And again, in a recent QUARTERLY, someone projected a series of stories based on old "twenty-second century legends," or words to that effect. Ingenious, I thought. What's holding up the second of these stories?

So here's a bit of a bribe, Mr. Editor (hoping this appears in "Reader Speaks" so it may entice the authors as well). If you'll give us an issue with Lem Gulliver, or Darrell, or another legend, I'll buy three copies instead of one—provided my credit is still good at the corner newsstand! Wouldn't a "legend" with both Lem and Darrell be a stampede!

HENRY ROSENBLUM,
Hollywood, Cal.

(Sequels to stories have always been welcome, and the reason for this is simple. It is like meeting an old friend to continue his adventures in future stories. Mr. Manning promises to write more stories concerning the "Stranger's Club," where the story of "The Call of the Mech-Men" was told.

We have received sequels to the Lem Gulliver stories, but have rejected them because they lacked the merit of the first two of the series. We do not accept a story just because it is a sequel. It must stand up on its own worth, and cannot lean up against former stories for its support.

You will also notice that J. Harvey Haggard is now presenting a series of tales concerning the "Earth-Guard."—EDITOR.)

Suggestions and Criticisms

Editor, WONDER STORIES:

I am listing here the contents of the November WONDER STORIES in order of merit.

1. The Call of the Mech-Men. Laurence Manning made a very good story out of the magnetic pole puzzle.

2. The Lunar Consul. Who or what is the Lunar Consul? Come on December issue!

3. The Man With the X-Ray Eyes. Leave it to Edmond Hamilton to think of something new.

4. Death Between the Planets.

5. Through the Einstein Line.

6. The End of Time. Very amusing. Good satire.

7. The Tomb From Beyond.

Now for the change in size.

Naturally, I don't like it. I have always preferred the large size for magazines, no matter what their content. The large size is less bulky, easier to handle, neater in appearance, and can have larger illustrations. I must disagree with you in your statement that the present 128-page WONDER STORIES contains as much reading material as the large 96-page issue. You should have at least 192 pages. Naturally if you were losing money in the old size, I can't blame you for reducing size and content. I would prefer the smaller WONDER STORIES than none at all. I trust that you will return to large size again as soon as business

conditions permit. Isn't it possible for you to have at least 144 pages and smooth-cut edges at the present time?

I suggest that you have the title of the magazine placed directly on the background of the cover illustration, as it takes up too much space in its present form. I think that it would be a good idea for you to take the band off the top of the cover and allow the picture to take up the whole space. I am glad that you are retaining the modern make-up. I would prefer that all the illustrating were done by Paul, unless you could obtain some by H. W. Wesso.

JACK DARROW.
Chicago, Ill.

(We welcome this monthly letter which comes typewritten in purple ink.

According to votes, it looks as though "The Call of the Mech-Men" was the most popular story in the November issue, with "The End of Tyme" and "The Man With X-Ray Eyes" following close.

Perhaps the large size may look better to you, but it certainly is not easier to handle. The present magazine can be easily carried anywhere and is not cumbersome. We will increase the number of pages in the magazine as soon as circulation warrants it. —EDITOR.)

The Stupidity of Scientists

Editor, WONDER STORIES:

Your new size, paper, and kind of ink used are of secondary importance. What matters is the brain work put into the stories. The November issue is above the average in that respect. "The Lunar Consul" is alone worth the price.

Where you get the Irish confetti is in your statement in Science Question and Answers that Palmistry is all superstition. Perhaps you don't realize that there is no more superstitious person in this world than the conventional university graduate. And his main superstition is his belief in his ability to judge possibilities and impossibilities. Outside a few free and outstanding spirits like Einstein, Lodge and Flammarion the scientific world consists of a lot of moles burrowing blindly, they don't know where, and slavish kow-towers to authority. Not an independent thought in a carload.

The writer is not a palmist, but knows enough of Palmistry as practiced in the East that it is well possible to foretell the trend and end of life of the subject. The lines of the hand are a visible picture of the warp and woof of the web of destiny woven by the person. And death is part of that destiny.

An example of the stupidity of the "scientist" is the fact that millions of dollars of American money are expended every year to dig up relics of rather unimportant civilizations abroad. Whereas a greater civilization than any to be found abroad, lies buried under more than one hundred feet in the Mississippi valley and the Middle West. This fact is quietly ignored in spite of the evidences brought up out of wells, etc., during the last fifty years in locations more than one thousand miles apart. But as archeology was started by Europeans, the American archeology follows meekly and hypnotized the orthodox track. The only exceptions are Chapman and Verrill. More power to them.

The whole question is the old one of orthodoxy. Orthodox is synonym for reactionary. The reactionary has always been the brake of progress. Besides it is so easy to follow the parade.

For your peace of mind: This is written by a dumb immigrant who's never had an hour's lesson of English in his life, and isn't long enough in the country to be a citizen.

FREDERICK G. HERR,
Sayville, L. I.

(We did not mention that Palmistry is a superstition in our November issue. We said that this was the case with horoscopes and astrology. Doctors and scientists learn many things about a person, through studying his hands, that are helpful in a diagnosis or research work. However, by Palmistry, we assume that you mean the possibility of foretelling the future by such method. This idea is ill-founded, illogical and unproven. When a palmist tells you what is going to happen, and if it does happen as he says, it is

(Continued on page 800)

ANATOMICAL MANUAL

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A UNIQUE NEW MANUAL OF SECTIONAL ANATOMICAL CHARTS AND ILLUSTRATIONS PREPARED BY MEDICAL EXPERTS.

This new book shows the human body with each aspect of its structure in separate sections; the exact position of all organs, every bone, muscle, vein, artery, etc.

LIST OF PLATES

Plate I.	Nude Adult Female
" II.	Nude Adult Male
" III.	Nervous System of Female
" IV.	Skeletal System
" V.	Muscular System (Posterior)
" VI.	Muscular System (Anterior)
" VII.	Vascular System
" VIII.	Respiratory System
" IX.	Digestive System
" X.	Male Genital Organs in Detail
" XI.	Female Genital Organ in Detail
" XII.	Cross-Section of Pregnant Female Body with Child.

All plates (one foot high) are printed in actual natural colors.

Thus far, plates such as these presented here have been so high in price as to be inaccessible to the public. Our plan in producing these charts is to make them available to every adult person.

The book is 14 inches high and 9½ inches wide, contains twelve full-page color plates and twelve text pages illustrated with fifty photographs and drawings, made from actual photographs, and all organs and parts of the human body—male and female—are shown in great detail in natural colors.

Opposite each page, an explanatory text is provided, illustrated with photographs and drawings to show in detail the different organs and other features of the human body. The book is recommended for nurses, art students, for lawyers for use in litigations, lecturers, physical culturists, hospitals, sanitariums, schools, colleges, gymnasiums, life insurance companies, employees' health departments, etc.

But every man and woman should own a copy of the ANATOMICAL MANUAL for effective knowledge of his or her own physical self!

It is of inestimable value to the prospective mother, because of the information it provides on the essential anatomical facts of pregnancy and the structure of the female genital organs.

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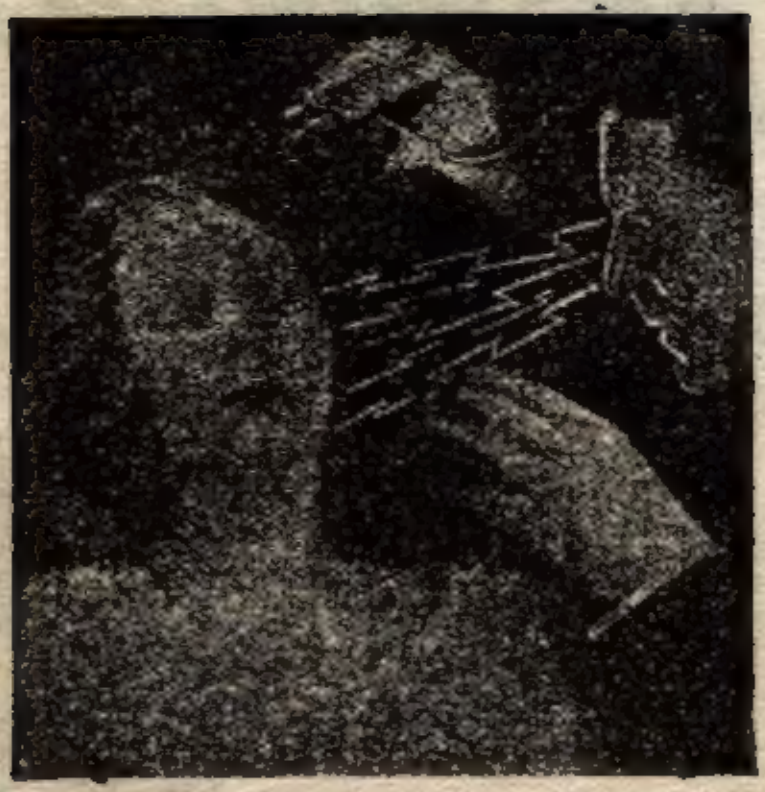

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THE READER SPEAKS

(Continued from page 799)

most likely by mere chance, the intervention of the palmist, the common sense he uses in figuring out the sequence of events, or a clever guess. We are yet to be convinced that there is any truth in palmistry. Mr. Hugo Gernsback, in his various scientific magazines in past years has run several contests for the supposed creators of occult and psychic miracles, and he has never found one that could exert the powers that were claimed. This also includes telepathy. This does not indicate that such things are impossible. It only means that they are exceedingly rare, if in existence, or have not as yet been perfected.

Would you please enlighten us as to the civilization you refer to that is buried in the Mississippi Valley? We have heard of nothing that was discovered there that would merit the high cost of excavation.—EDITOR.)

Science Fiction Movies

Editor, WONDER STORIES:

In the October number of WONDER STORIES, I read a letter written by Forrest Ackerman in which he stated that several scientifiction stories were being prepared for filming, and in your comment, you seemed to disagree with Mr. Ackerman. Now really, Mr. Editor, don't you think you are being a bit hasty in assuming that the film companies are merely sounding out the public and that they don't really have some such films in production? I do, because at this minute there are two scientifiction films being shown here in Miami, and they are "Deluge" and "F.P.1." The first named was printed in a scientifiction magazine a number of years ago under the name of "Second Deluge" and dealt with the discovery of the secret of the Sphinx, which predicted the second inundation of the earth. Remember? The second, "F.P.1," which stands for "Floating Platform No. 1" was in the same magazine some years ago and was called "Atlantis the Second." This story was about the system of mechanical islands in the Atlantic between Europe and America and the impending destruction of platform 1.

Besides these two films, I have seen several announcements of the forthcoming "Invisible Man" which Mr. Ackerman mentioned.

And still on the same subject, do you remember that thrilling picture called "Metropolis" that was shown in the old silent days? The scene was laid in a wonderful city of the distant future and it was about the creation of a mechanical woman by a mad scientist and the destruction by her, of this city. It was a great picture and beautifully filmed. Then there was the "Island of Lost Souls" which Mr. Ackerman has mentioned and I might add "Frankenstein" to this list, and tentatively, "Just Imagine," which was more of a satire.

Please accept my vote of approval on your magazine.

PAULINE DAYS,
Miami, Florida.

(It is true that more science-fiction movies are being made today than ever before, but at the same time, the film companies have bought stories that they have put on the shelf and have altogether abandoned other ideas for this kind of picture. The deluge story that the movie is taken from is "Deluge" by S. Fowler Wright, and not the "Second Deluge" by Garret P. Serviss. We certainly would like to see the latter as a movie. Also, "Floating Platform No. 1" was taken from a German story by that name, and, although somewhat similar in idea to "A Modern Atlantis," it had no connection with this story. We have fond memories of "Metropolis" and "The Lost World" of the silent days.—EDITOR.)

STARTING NEXT MONTH

"Xandulu"

by Jack Williamson

The THIRD SEX! Man or Woman?

For hundreds of years men and women have talked with hushed voices about "STRANGE PEOPLE"—men who are not men—women who are not women. No one has ever *dared* to talk out in the open about it. Is it any wonder that the shocking, lurid facts of this great social evil are unknown to the great mass of men and women? Is it any wonder that strange nick-names are commonly used to describe these creatures.

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THE TRUTH REVEALED!

Can you distinguish these men and women of the Shadow World? Do you know that their number is constantly increasing? The strange power these men and women wield over normal people is almost unbelievable. Dr. Potter says, "NO MAN ON EARTH HAS A CHANCE AGAINST A WOMAN ONCE SHE HAS SUCCUMBED TO ANOTHER WOMAN." Actual clinical cases reveal the abnormal ties and the unnatural desires and erotic reactions of these twilight men and women! There are records that actually prove that men have been MADE INTO ABNORMALS. A startling, provocative indictment against the false modesty that has been responsible for the growth of these fantastic, strange amatory curiosities among savage and civilized races.

STRANGE LOVE

Dr. Potter tells about the hidden, secret passions that dominate these women's exotic lives. He talks about the tragic duality of the effeminate man—half man—half woman. He delves deep into the ages—relates the bestialities and savageries practiced by the old Egyptians, Hindoos, Greeks, Assyrians and Romans—the sensuality that was ascribed even to the Greek Gods, to Zeus, Apollo, Hercules and Jupiter—the growth through history from ancient countries to France—to Germany—to its tremendous spread through the United States.

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How many of the famous men of history were considered "odd"? Socrates, Plato, Caesar, Virgil, Oscar Wilde, Leonardo da Vinci, Lord Byron, Tchaikowsky, the musician, Walt Whitman, the gentle, lovable poet, Napoleon—men and women of all kinds in all stages of life.

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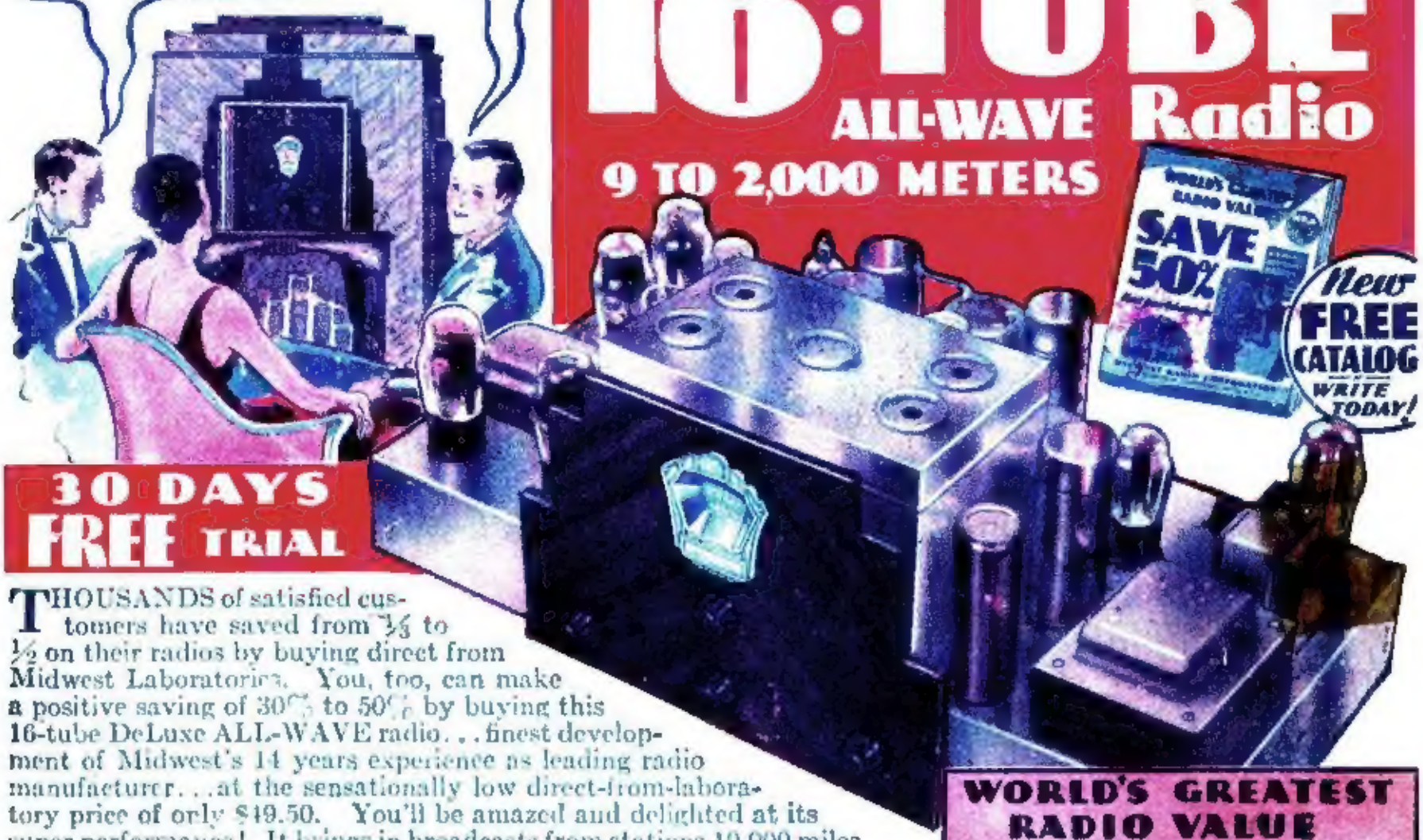

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